ATS-13-399

Form 3160-3
(April 2004)

OCD Artesia

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
Fee - NMNM110831

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Bank 18 Federal Com. #1H (39957)

2. Name of Operator
OXY USA Inc. (16696)

9. API Well No.
30-015- 41447

3a. Address P.O. Box 50250
Midland, TX 79710

3b. Phone No. *(include area code)*
432-685-5717

10. Field and Pool, or Exploratory
Und. Loving Brushy Canyon, East (40350)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 133 FNL 485 FWL NWNW(1)
At proposed prod. zone 660 FNL 350 FEL NENE(A)

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 18 T23S R29E

14. Distance in miles and direction from nearest town or post office*
5 miles northeast from Loving, NM

12. County or Parish
Eddy

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
133'

16. No. of acres in lease
160ac - 80ac

17. Spacing Unit dedicated to this well
~~160ac~~ 157.61

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
None

19. Proposed Depth
6246'V 10419'M

20. BLM/BIA Bond No. on file
NMB000862 - ESB000226

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
2979.5' GL

22. Approximate date work will start*
04/15/2013

23. Estimated duration
35 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature [signature] Name *(Printed/Typed)* David Stewart Date 2/12/13

Title Regulatory Advisor david_stewart@oxy.com

Approved by *(Signature)* /s/ James Stovall Name *(Printed/Typed)* Date JUN -7 2013

Title FIELD MANAGER Office CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on page 2)

Carlsbad Controlled Water Basin

RECEIVED
JUN 12 2013
NMOCD ARTESIA

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☑ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015- 41447	40350	Undesignated Loving Brushy Canyon, East

Property Code	Property Name	Well Number
39957	BANK "18" FEDERAL Com.	1H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	2979.5'

Surface Location

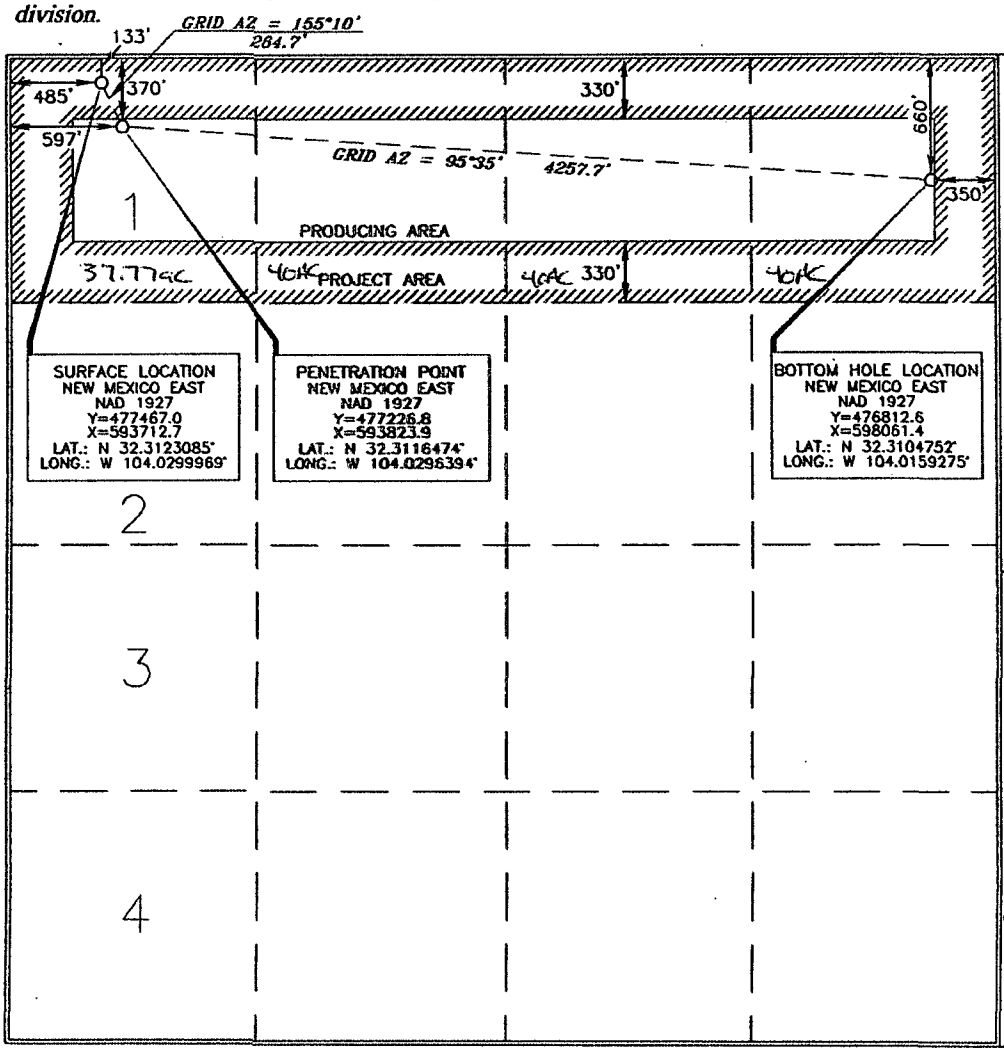
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	18	23 SOUTH	29 EAST, N.M.P.M.		133'	NORTH	485'	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	18	23 SOUTH	29 EAST, N.M.P.M.		660'	NORTH	350'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
151.52 ~~157.77~~	N		

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 3/6/13 Date

David Stewart Reg. Adv.
Printed Name

david_stewart@oxy.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JANUARY 10, 2013
Date of Survey

Signature and Seal of Professional Surveyor:

NEW MEXICO JERRY JASE 15079 PROFESSIONAL LAND SURVEYOR

Terry J. Asel 1/24/2013
Certificate Number 15079

WO# 130110WL-a (Rev. A) (KA)

OPERATOR CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 12th day of February, 2013.

Name: Peter Lawrence

Position: Reservoir Management Team Leader

Address: 5 Greenway Plaza, Suite 110, Houston, TX 77046

Telephone: 713-215-7644

E-mail: (optional): peter_lawrence@oxy.com

Company: Occidental Permian LP / OXY USA Inc. / OXY USA WTP LP

Field Representative (if not above signatory): Dusty Weaver

Address (If different from above): P.O. Box 50250 Midland, TX 79710

Telephone (if different from above): 432-685-5723

E-mail (if different from above): calvin_weaver@oxy.com

OXY USA Inc.
Box 4294, Houston, TX 77210-4294

Wesley Robertson, RPL
Land Negotiator

Phone (713) 366-5022
Cell (713) 918-9064
Fax (713) 985-4944
Wesley_Robertson@oxy.com

United States Department of the Interior
Bureau of Land Management
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220

Attention: Linda Denniston

RE: Bank 18 Federal Com. 1H

Eddy County, New Mexico

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

OPERATOR NAME:	OXY USA Inc.
ADDRESS:	P.O. Box 4294 Houston, Texas 77210-4294

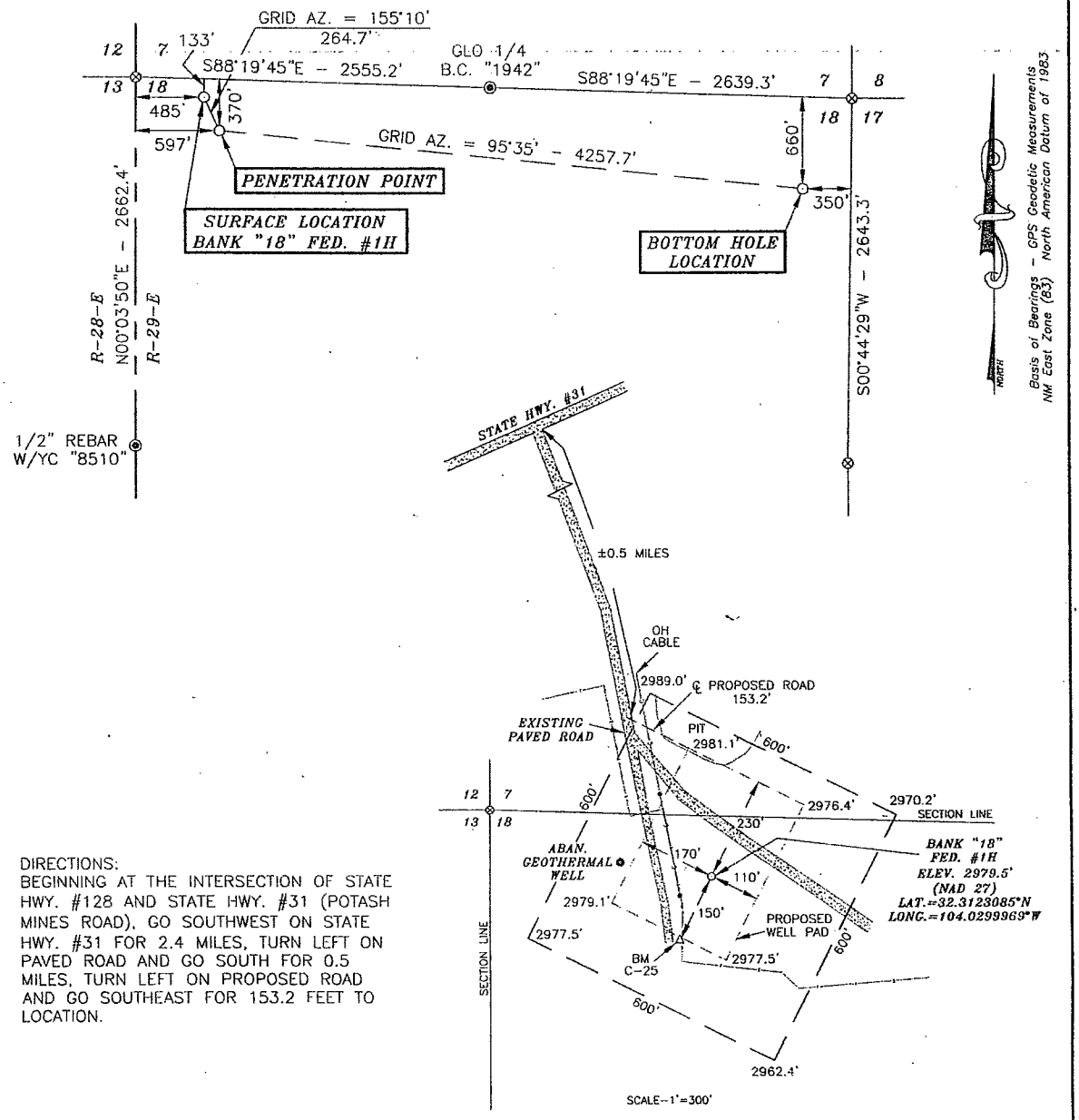
The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

LEASE NO.:	**NMNM 110831**
LEGAL DESCRIPTION:	
Surface Location:	133' FNL & 485' FWL Section 18
Bottom Hole Location:	660' FNL & 350' FEL Section 18 T23S-R29E Eddy County, New Mexico
FORMATIONS:	Delaware
BOND COVERAGE:	Individual/Nationwide
BLM BOND FILE NO.:	NMB000862 (Individual) ESB 000226 (Nationwide)
AUTHORIZED SIGNATURE:	OXY USA Inc. Wesley Robertson
TITLE:	Land Negotiator
DATE:	February 4, 2013

cc: David Stewart

600 x 600'

SECTION 18, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY NEW MEXICO



DIRECTIONS:
BEGINNING AT THE INTERSECTION OF STATE HWY. #128 AND STATE HWY. #31 (POTASH MINES ROAD), GO SOUTHWEST ON STATE HWY. #31 FOR 2.4 MILES, TURN LEFT ON PAVED ROAD AND GO SOUTH FOR 0.5 MILES, TURN LEFT ON PROPOSED ROAD AND GO SOUTHEAST FOR 153.2 FEET TO LOCATION.

TERRY J ASEL
NEW MEXICO
15079
PROFESSIONAL LAND SURVEYOR

LEGEND

◉ – DENOTES FOUND MONUMENT AS NOTED
⊗ – DENOTES CALCULATED CORNER

1000' 0 1000' 2000' FEET
SCALE: 1"=1000'

SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 1/24/2013
Terry J. Asel N.M. R.P.L.S. No. 15079

Asel Surveying
P.O. BOX 393 – 310 W. TAYLOR
HOBBS, NEW MEXICO – 575-393-9146

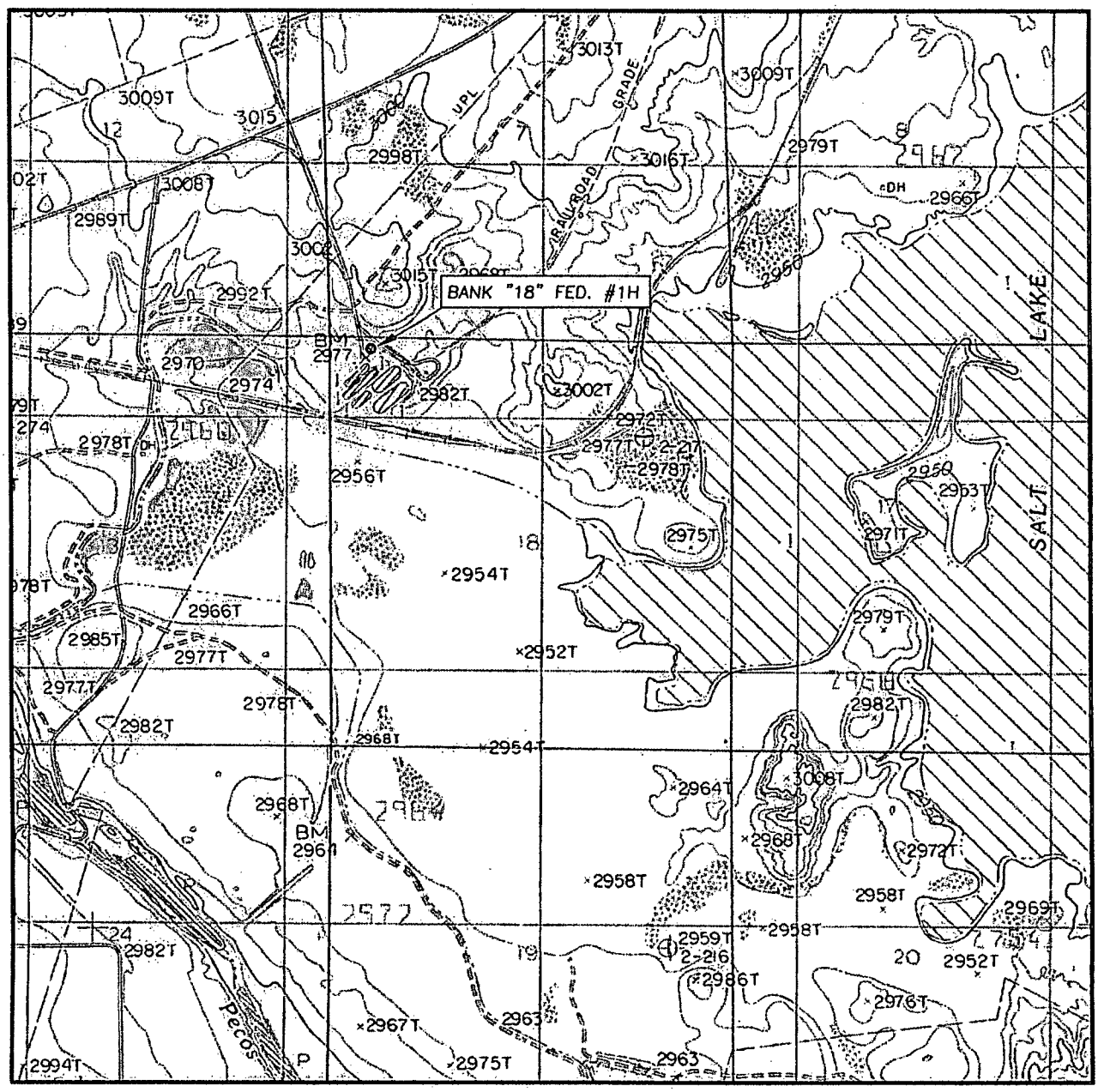
OXY USA INC.

BANK "18" FED. Com. #1H LOCATED AT
133' FNL & 485' FWL IN SECTION 18,
TOWNSHIP 23 SOUTH, RANGE 29 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 01/10/13	Sheet 1 of 1 Sheets	
W.O. Number: 130110WL-a (Rev. A)	Drawn By: KA	Rev: A
Date: 01/24/13	130110WL-a	Scale: 1"=1000'

LUM

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 18 TWP. 23-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 133' FNL & 485' FWL

ELEVATION 2979.5'

OPERATOR OXY USA INC.

LEASE BANK "18" FED. COM. #1H

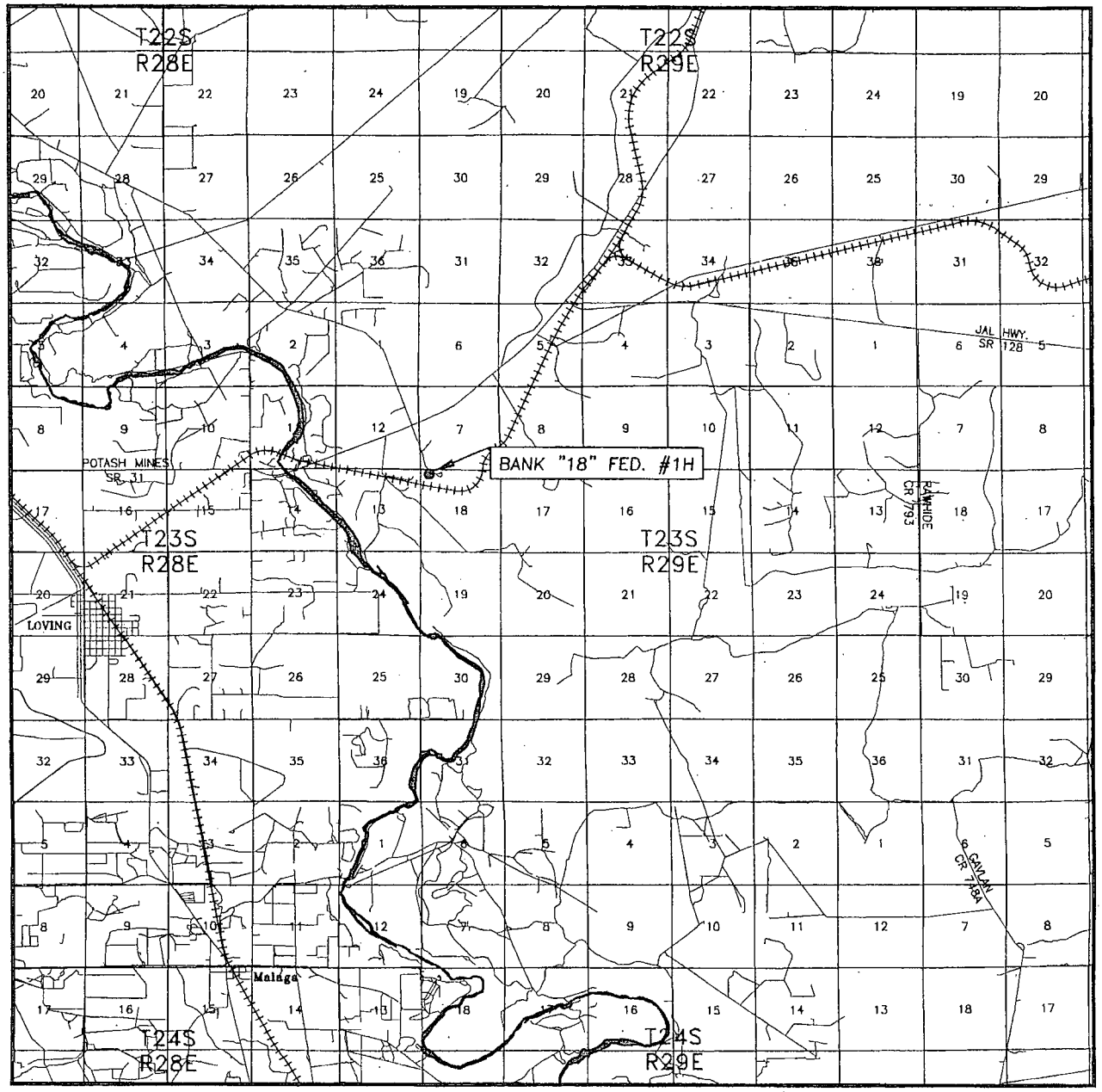
U.S.G.S. TOPOGRAPHIC MAP
LOVING, N.M.

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

VM

VICINITY MAP



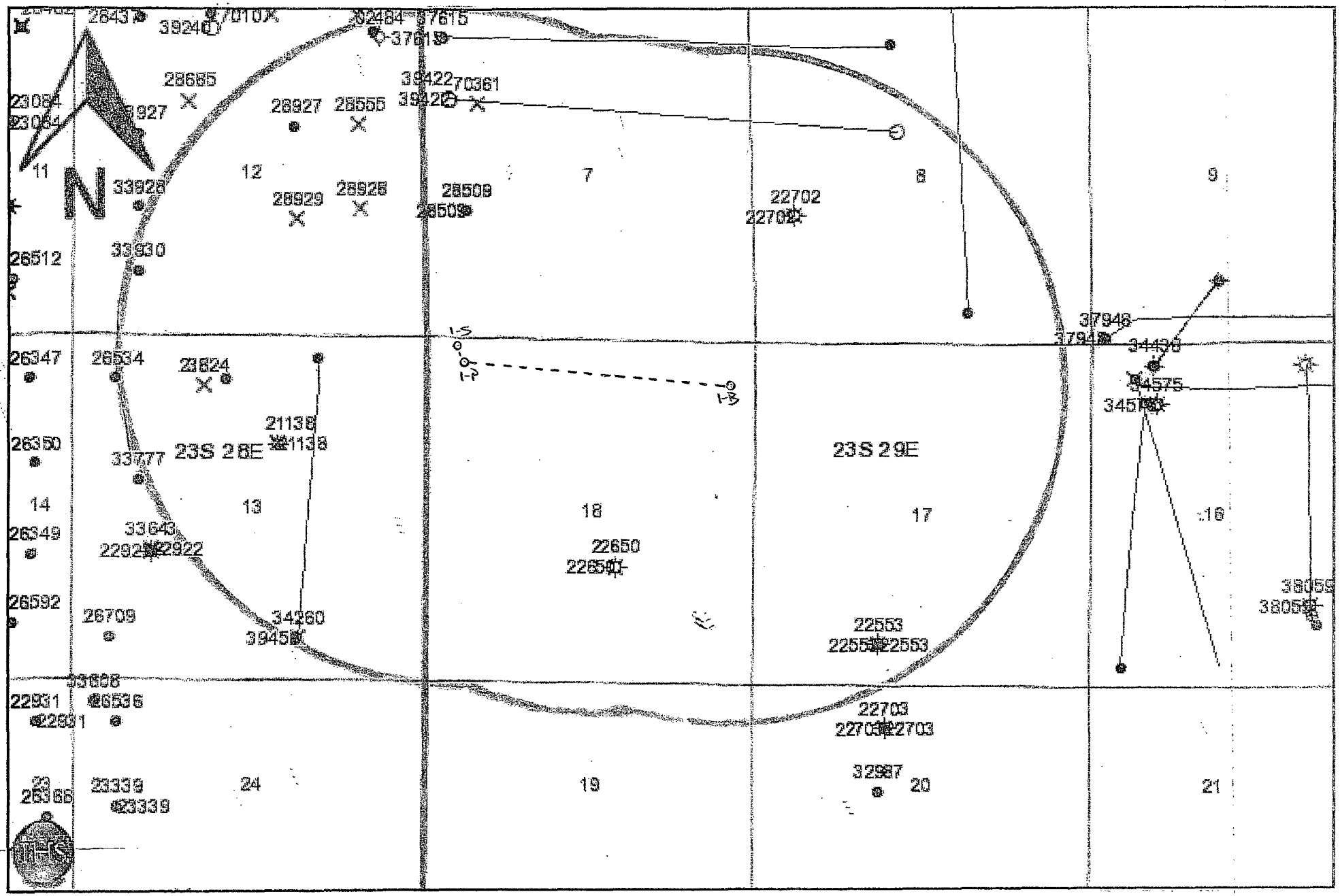
SEC. 18 TWP. 23-S RGE. 29-E
SURVEY N.M.P.M.
COUNTY EDDY
DESCRIPTION 133' FNL & 485' FWL
ELEVATION 2979.5'
OPERATOR OXY USA INC.
LEASE BANK "18" FED. COM. #1H

SCALE: 1" = 2 MILES

Asel Surveying
P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

DIRECTIONS BEGINNING AT THE INTERSECTION OF STATE HWY. #128 AND STATE HWY. #31 (POTASH MINES ROAD), GO SOUTHWEST ON STATE HWY. #31 FOR 2.4 MILES, TURN LEFT ON PAVED ROAD AND GO SOUTH FOR 0.5 MILES, TURN LEFT ON PROPOSED ROAD AND GO SOUTHEAST FOR 153.2 FEET TO LOCATION.

Bank 18 Federal Com #1H - 1 Mile AOR



1 mi AOR

Bank 18 Federal Com. #1H

9 sec Plat

DRILLING PROGRAM

Operator Name/Number:	**OXY USA Inc.**	**16696**
Lease Name/Number:	**Bank 18 Federal Com. #1H**	
Pool Name/Number:	**Undesignated Loving Brushy Canyon, East**	**40350**
Surface Location:	**133 FNL 485 FWL NWNW(1) Sec 18 T23S R29E**	**Fee**
Penetration Point:	**370 FNL 597 FWL NWNW(1) Sec 18 T23S R29E**	
Bottom Hole Location:	**660 FNL 350 FEL NENE(A) Sec 18 T23S R29E**	**Fee**

Proposed TD: **Horizontal Lateral** **6246'** **TVD** **10419'** **TMD**
SL - Lat: 32.3123085 **Long: 104.0299969** **X= 593712.7** **Y= 477467.0** **NAD - 1927**
BH - Lat: 32.3104752 **Long: 104.0159275** **X= 598061.4** **Y= 476812.6** **NAD - 1927**
Elevation: **2979.5' GL**

1. Geologic Name of Surface Formation:

a. Permian

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Geological Marker	Depth	Type
a. Rustler	204'	Formation
b. Top Salt	279'	Formation
c. Base Salt	804'	Formation
d. Base Anhydrite	2744'	Formation
e. Bell Canyon	2804'	Oil/Gas
f. Cherry Canyon	3469'	Oil/Gas
g. Brushy Canyon	4856'	Oil/Gas
h. Brushy Canyon A3 Sand	6236'	Oil/Gas

Fresh water may be present above the Rustler formation. Surface casing will be set below the top of the Rustler, which will cover potential fresh water sources. See attached for the NMSEO website water wells.

3. Casing Program:

See COA

Hole Size	Interval	OD Csg	Weight	Collar	Grade	Condition	Collapse Design Factor	Burst Design Factor	Tension Design Factor
16"	0-250'	13-3/8"	48	ST&C	H-40	New	7.04	13.6	5.17
	2730			Hole filled with 8.4# Mud			770#	1730#	
12-1/4"	0-~~2800~~	9-5/8"	36	LT&C	J-55	New	3.27	1.41	1.51
				Hole filled with 10.0# Mud			2020#	3520#	
8-1/2"	0-10419'	5-1/2"	17	BT&C	L80	New	2.07	1.25	1.34
*DVT @ 5000'				Hole filled with 9.6# Mud			6290#	7740#	

Collapse and burst loads calculated using Stress Check with anticipated loads

4. Cement Program

a. 13-3/8" Surface Circulate cement to surface w/ 235sx PP cmt w/ 2% CaCl2 + .125#/sx Poly-E-Flake, 14.8ppg 1.35 yield 1608# 24hr CS 165% Excess

b. 9-5/8" Intermediate Circulate cement to surface w/ 730sx HES light PP cmt w/ 5% Salt + .125#/sx Poly-E-Flake + 3#/sx Kol Seal, 12.9ppg 1.87 yield 625# 24hs CS 105% Excess followed by 300sx PP cmt w/ 1% CaCl2,14.8ppg 1.34 yield 2125# 24hr CS 105% Excess

c. 5-1/2" Production Cement w/ 610sx HES light PP cmt w/ 3#/sx salt, 12.4ppg 2.05 yield 500# 24 hr CS 85% Excess followed by 1070sx Super H w/ 3#/sx salt + .5% Halad-344 + .125#/sx Poly-E-Flake + 3#/sx Kol-Seal +.2% HR-601 + .4% CFR-3, 13.2ppg 1.66 yield 1673# 24hr CS 50% Excess, Calc TOC-2200'

*Contingency Plan--DVT will be set @ 5000'. If returns are not lost during first stage, the DVT cancellation plug will be run and 2nd stage job cancelled. If needed see below for 2nd stage cementing program:

See COA Cement w/ 530sx HES light PP cmt w/ 3#/sx Salt, 12.4ppg 2.05 yield 500# 24hs CS 85% Excess followed by 100sx PP cmt w/ 1% CaCl2, 14.8ppg 1.34 yield 1943# 24hr CS 85% Excess, Calc TOC-2200'

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); CFR-3 (Dispersant); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad-344 (Low Fluid Loss Control); HR-601 (Retarder)

The above cement volumes could be revised pending the caliper measurement.

5. Pressure Control Equipment:

Surface: None

Intermediate/Production: 13-5/8" 10M three ram stack w/ 5M annular preventer, 5M Choke Manifold

The 13-5/8" 5000psi blowout prevention equipment will be installed and operational after setting the 13-3/8" surface casing; the rotating head body will be installed but the rubber will be installed when it becomes operationally necessary.

The BOP and ancillary BOPE will be tested by a third party upon installation of the surface casing. All equipment will be tested to 250/5000psi for 10 minutes and charted, except the annular, which will be tested to 70% of working pressure (250/3500psi). This test will be repeated if the BOP stack is nipped down at some point, or no later than 30days after the first test. This is to be in compliance with the Onshore Order # 2. A multibowl wellhead system will be used. See COA

The pipe rams will be functionally tested during each 24 hour period; the blind rams will be functionally tested on each trip out of the hole. These functional tests will be documented on the Daily Driller's Log. Other accessory equipment (BOPE) will include a safety valve and subs as needed to fit all drill strings, and a 2" kill line and 3 " choke line having a 5000psi WP rating. Oxy requests that the system be tested at 5000psi WP.

See COA OXY also requests a variance to connect the BOP choke outlet to the choke manifold using a co-flex hose that is manufactured by Contitech Rubber Industrial KFT. It is a 3" ID X 35' flexible hose rated to 10000psi working pressure. It has been tested to15000psi and is built to API Spec 16C. Once the flex line is installed, it will be tied down with safety clamps, see attached for certifications.

6. Proposed Mud Circulation System

See COA

Depth	Mud Wt. ppg	Visc sec	Fluid Loss	Type System
0 - 250'	8.45-8.9	32-36	NC	Fresh Water/Spud Mud
250 - ~~2800'~~ 2730'	9.8-10.0	28-35	NC	Fresh Water/NaCl Brine
~~2800~~ - 5300'	8.8-9.2	26-32	NC	Cut Brine/Sweeps
5300 - TD'	9.2-9.4	32-50	<10	Salt Gel/Duo Vis

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

7. Auxiliary Well Control and Monitoring Equipment:

a. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.

b. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM.

See COA

8. Logging, Coring and Testing Program:

a. Drill stem tests are not anticipated but if done will be based on geological sample shows.
b. The logging program will consist of MWD/GR from base of intermediate casing to TD.
c. No coring program is planned but if done will be sidewall rotary cores.
d. Mud logging will be initiated from the base of surface casing to TD. See COA

9. Potential Hazards:

a. No abnormal pressures or temperatures are anticipated. The highest anticipated pressure gradient would be 0.54 psi/ft. Maximum anticipated bottomhole pressure is 3300-3400psi.
b. If H2S is encountered the operator will comply with the provisions of Onshore Oil & Gas Order No.6.
c. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

10. Anticipated Starting Date and Duration of Operations:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 35 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02608			ED	3	1	4	17	23S	29E	593598	3574387*	400		
C 02613			ED	4	4	2	20	23S	29E	594203	3573176*	400		
C 02704	C		ED			1	19	23S	29E	591531	3573493*	174		
C 02705	C		ED			2	17	23S	29E	593902	3575093*	68	28	40
C 02706	C		ED			4	18	23S	29E	592302	3574291*	17	10	7
C 02804			ED		2	1	08	23S	29E	593262	3576905*	100		
C 02805			ED		2	1	08	23S	29E	593262	3576905*	100		
C 03059 EXPLORE			ED	4	1	3	17	23S	29E	592993	3574378*		65	

Average Depth to Water: **34 feet**

Minimum Depth: **10 feet**

Maximum Depth: **65 feet**

Record Count: 8

PLSS Search:

Section(s): 7, 8, 17, 18, 19, 20 **Township:** 23S **Range:** 29E

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 00500			ED	4	3	1	24	23S	28E	589811	3573176*	130		
C 00868			ED	4	3	1	24	23S	28E	589811	3573176*	190		
C 01214			ED	1	2	3	13	23S	28E	590010	3574597*	70	20	50
C 01215			ED	4	2	3	13	23S	28E	590210	3574397*	104	15	89
C 01216			ED	4	1	1	13	23S	28E	589801	3575205*	60	45	15
C 01217			ED	1	1	3	13	23S	28E	589606	3574593*	87	50	37
C 01967	C		ED		2	3	13	23S	28E	590111	3574498*	264	200	64
C 02702	C		ED			2	13	23S	28E	590715	3575108*	38	20	18
C 03146	C		ED	1	1	3	24	23S	28E	589613	3572970*	82	36	46

Average Depth to Water: **55 feet**

Minimum Depth: **15 feet**

Maximum Depth: **200 feet**

Record Count: 9

PLSS Search:

Section(s): 12, 13, 24 **Township:** 23S **Range:** 28E

***UTM location was derived from PLSS - see Help**

OXY Permian

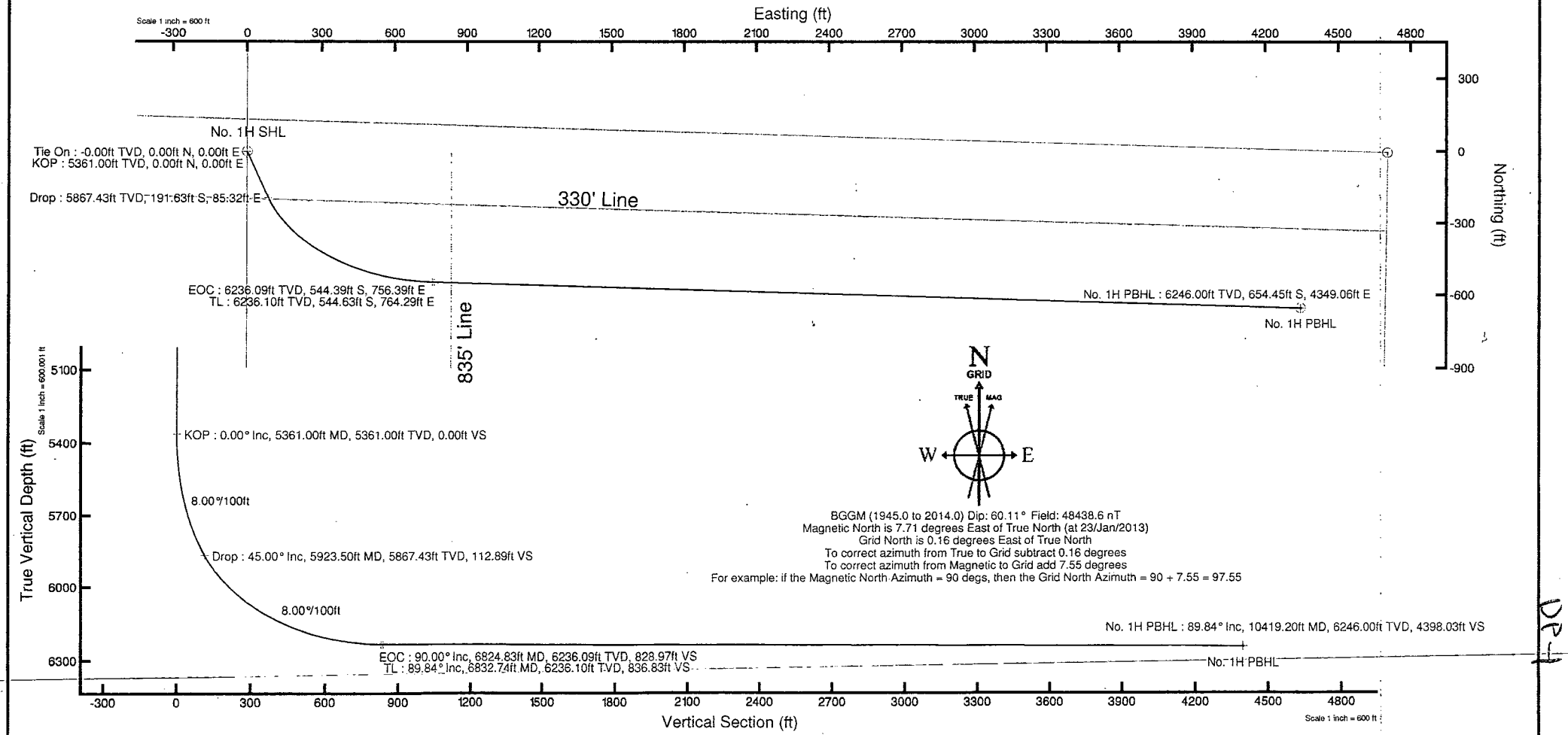
Location: Eddy County, NM
Field: (Bank) Sec 18, T 23, R 29E
Facility: Bank 18 Fed 1H

Slot: No. 1H SHL
Well: No.1H
Wellbore: No. 1H PWB

BAKER HUGHES

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	156.000	0.00	0.00	0.00	0.00	0.00
KOP	5361.00	0.000	156.000	5361.00	0.00	0.00	0.00	0.00
Drop	5923.50	45.000	156.000	5867.43	-191.63	85.32	8.00	112.89
EOC	6824.83	90.000	91.755	6236.09	-544.39	756.39	8.00	828.97
TL	6832.74	89.842	91.755	6236.10	-544.63	764.29	2.00	836.83
No. 1H PBHL	10419.20	89.842	91.755	6246.00	-654.45	4349.06	0.00	4398.03

Plot reference wellpath is Rev-A.0	
True vertical depths are referenced to Rig on No. 1H SHL (RT)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 1H SHL (RT)	North Reference: Grid north
Rig on No. 1H SHL (RT) to Mean Sea Level: 2979.5 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 1H SHL): -2979.5 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gilbjosl on 25/Jan/2013



BGGM (1945.0 to 2014.0) Dip: 60.11° Field: 48438.6 nT
Magnetic North is 7.71 degrees East of True North (at 23/Jan/2013)
Grid North is 0.16 degrees East of True North
To correct azimuth from True to Grid subtract 0.16 degrees
To correct azimuth from Magnetic to Grid add 7.55 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.55 = 97.55

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Planned Wellpath Report

Rev-A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	**OXY Permian**	Slot	**No. 1H SHL**
Area	**Eddy County, NM**	Well	**No.1H**
Field	**(Bank) Sec 18, T 23, R 29E**	Wellbore	**No. 1H PWB**
Facility	**Bank 18 Fed 1H**		

REPORT SETUP INFORMATION

Projection System	**NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 3.0.0**
North Reference	**Grid**	User	**Gilbjosl**
Scale	**0.999919**	Report Generated	**25/Jan/2013** at **3:13:11 PM**
Convergence at slot	**0.16° East**	Database/Source file	**WA Midland/No._1H_PWB.xml**

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	**East[ft]**	**Easting[US ft]**	**Northing[US ft]**	**Latitude**	**Longitude**
Slot Location	**0.00**	**0.00**	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W
Facility Reference Pt			**593712.70**	**477467.00**	32°18'44.311"N	104°01'47.989"W
Field Reference Pt			**0.00**	**0.00**	30°59'24.512"N	105°55'44.137"W

WELLPATH DATUM

Calculation method	**Minimum curvature**	Rig on No. 1H SHL (RT) to Facility Vertical Datum	**0.00ft**
Horizontal Reference Pt	**Slot**	Rig on No. 1H SHL (RT) to Mean Sea Level	**2979.50ft**
Vertical Reference Pt	**Rig on No. 1H SHL (RT)**	Rig on No. 1H SHL (RT) to Mud Line at Slot (No. 1H SHL)	**0.00ft**
MD Reference Pt	**Rig on No. 1H SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**98.56°**

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Planned Wellpath Report

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	**OXY Permian**	Slot	**No. 1H SHL**
Area	**Eddy County, NM**	Well	**No.1H**
Field	**(Bank) Sec 18, T 23, R 29E**	Wellbore	**No. 1H PWB**
Facility	**Bank 18 Fed 1H**		

WELLPATH DATA (110 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	156.000	0.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	Tie On
100.00†	0.000	156.000	100.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
200.00†	0.000	156.000	200.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
300.00†	0.000	156.000	300.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
400.00†	0.000	156.000	400.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
500.00†	0.000	156.000	500.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
600.00†	0.000	156.000	600.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
700.00†	0.000	156.000	700.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
800.00†	0.000	156.000	800.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
900.00†	0.000	156.000	900.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1000.00†	0.000	156.000	1000.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1100.00†	0.000	156.000	1100.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1200.00†	0.000	156.000	1200.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1300.00†	0.000	156.000	1300.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1400.00†	0.000	156.000	1400.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1500.00†	0.000	156.000	1500.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1600.00†	0.000	156.000	1600.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1700.00†	0.000	156.000	1700.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1800.00†	0.000	156.000	1800.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
1900.00†	0.000	156.000	1900.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2000.00†	0.000	156.000	2000.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2100.00†	0.000	156.000	2100.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2200.00†	0.000	156.000	2200.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2300.00†	0.000	156.000	2300.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2400.00†	0.000	156.000	2400.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2500.00†	0.000	156.000	2500.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2600.00†	0.000	156.000	2600.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2700.00†	0.000	156.000	2700.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2800.00†	0.000	156.000	2800.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
2900.00†	0.000	156.000	2900.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	

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Planned Wellpath Report

Rev-A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	**OXY Permian**	Slot	**No. 1H SHL**
Area	**Eddy County, NM**	Well	**No.1H**
Field	**(Bank) Sec 18, T 23, R 29E**	Wellbore	**No. 1H PWB**
Facility	**Bank 18 Fed 1H**		

WELLPATH DATA (110 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3000.00†	0.000	156.000	3000.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3100.00†	0.000	156.000	3100.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3200.00†	0.000	156.000	3200.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3300.00†	0.000	156.000	3300.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3400.00†	0.000	156.000	3400.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3500.00†	0.000	156.000	3500.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3600.00†	0.000	156.000	3600.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3700.00†	0.000	156.000	3700.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3800.00†	0.000	156.000	3800.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
3900.00†	0.000	156.000	3900.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4000.00†	0.000	156.000	4000.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4100.00†	0.000	156.000	4100.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4200.00†	0.000	156.000	4200.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4300.00†	0.000	156.000	4300.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4400.00†	0.000	156.000	4400.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4500.00†	0.000	156.000	4500.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4600.00†	0.000	156.000	4600.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4700.00†	0.000	156.000	4700.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4800.00†	0.000	156.000	4800.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
4900.00†	0.000	156.000	4900.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
5000.00†	0.000	156.000	5000.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
5100.00†	0.000	156.000	5100.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
5200.00†	0.000	156.000	5200.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
5300.00†	0.000	156.000	5300.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	
5361.00†	0.000	156.000	5361.00	0.00	0.00	0.00	593712.70	477467.00	32°18'44.311"N	104°01'47.989"W	0.00	KOP
5400.00†	3.120	156.000	5399.98	0.57	-0.97	0.43	593713.13	477466.03	32°18'44.301"N	104°01'47.984"W	8.00	
5500.00†	11.120	156.000	5499.13	7.24	-12.28	5.47	593718.17	477454.72	32°18'44.189"N	104°01'47.926"W	8.00	
5600.00†	19.120	156.000	5595.59	21.26	-36.09	16.07	593728.77	477430.91	32°18'43.953"N	104°01'47.803"W	8.00	
5700.00†	27.120	156.000	5687.48	42.38	-71.94	32.03	593744.73	477395.07	32°18'43.598"N	104°01'47.619"W	8.00	
5800.00†	35.120	156.000	5773.02	70.17	-119.11	53.03	593765.73	477347.90	32°18'43.131"N	104°01'47.376"W	8.00	

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Planned Wellpath Report

Rev-A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	**OXY Permian**	Slot	**No. 1H SHL**
Area	**Eddy County, NM**	Well	**No.1H**
Field	**(Bank) Sec 18, T 23, R 29E**	Wellbore	**No. 1H PWB**
Facility	**Bank 18 Fed 1H**		

WELLPATH DATA (110 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5900.00†	43.120	156.000	5850.54	104.09	-176.71	78.67	593791.37	477290.31	32°18'42.560"N	104°01'47.079"W	8.00	
5923.50	45.000	156.000	5867.43	112.89	-191.63	85.32	593798.01	477275.38	32°18'42.412"N	104°01'47.002"W	8.00	Drop
6000.00†	47.255	148.103	5920.49	145.70	-240.24	111.19	593823.88	477226.78	32°18'41.931"N	104°01'46.702"W	8.00	
6100.00†	50.946	138.703	5986.03	199.29	-300.68	156.29	593868.98	477166.34	32°18'41.331"N	104°01'46.178"W	8.00	
6200.00†	55.313	130.316	6046.09	264.04	-356.54	213.36	593926.04	477110.49	32°18'40.777"N	104°01'45.515"W	8.00	
6300.00†	60.194	122.815	6099.48	338.67	-406.74	281.28	593993.95	477060.30	32°18'40.278"N	104°01'44.726"W	8.00	
6400.00†	65.458	116.038	6145.18	421.74	-450.29	358.73	594071.40	477016.75	32°18'39.845"N	104°01'43.825"W	8.00	
6500.00†	71.000	109.822	6182.28	511.64	-486.34	444.21	594156.88	476980.70	32°18'39.486"N	104°01'42.830"W	8.00	
6600.00†	76.736	104.013	6210.08	606.60	-514.20	536.05	594248.71	476952.84	32°18'39.208"N	104°01'41.761"W	8.00	
6700.00†	82.597	98.476	6228.02	704.79	-533.33	632.47	594345.12	476933.72	32°18'39.016"N	104°01'40.638"W	8.00	
6800.00†	88.524	93.084	6235.77	804.29	-543.34	731.58	594444.22	476923.71	32°18'38.914"N	104°01'39.483"W	8.00	
6824.83	90.000	91.755	6236.09	828.97	-544.39	756.39	594469.02	476922.66	32°18'38.903"N	104°01'39.194"W	8.00	EOC
6832.74	89.842	91.755	6236.10	836.83	-544.63	764.29	594476.93	476922.42	32°18'38.900"N	104°01'39.102"W	2.00	TL
6900.00†	89.842	91.755	6236.28	903.62	-546.69	831.52	594544.15	476920.36	32°18'38.878"N	104°01'38.319"W	0.00	
7000.00†	89.842	91.755	6236.56	1002.91	-549.75	931.48	594644.10	476917.29	32°18'38.845"N	104°01'37.155"W	0.00	
7100.00†	89.842	91.755	6236.84	1102.21	-552.81	1031.43	594744.04	476914.23	32°18'38.812"N	104°01'35.990"W	0.00	
7200.00†	89.842	91.755	6237.11	1201.50	-555.88	1131.38	594843.99	476911.17	32°18'38.778"N	104°01'34.826"W	0.00	
7300.00†	89.842	91.755	6237.39	1300.80	-558.94	1231.33	594943.93	476908.11	32°18'38.745"N	104°01'33.661"W	0.00	
7400.00†	89.842	91.755	6237.66	1400.09	-562.00	1331.29	595043.88	476905.05	32°18'38.712"N	104°01'32.497"W	0.00	
7500.00†	89.842	91.755	6237.94	1499.39	-565.06	1431.24	595143.82	476901.98	32°18'38.679"N	104°01'31.332"W	0.00	
7600.00†	89.842	91.755	6238.22	1598.68	-568.12	1531.19	595243.77	476898.92	32°18'38.646"N	104°01'30.168"W	0.00	
7700.00†	89.842	91.755	6238.49	1697.98	-571.19	1631.14	595343.71	476895.86	32°18'38.613"N	104°01'29.003"W	0.00	
7800.00†	89.842	91.755	6238.77	1797.28	-574.25	1731.10	595443.65	476892.80	32°18'38.580"N	104°01'27.839"W	0.00	
7900.00†	89.842	91.755	6239.04	1896.57	-577.31	1831.05	595543.60	476889.74	32°18'38.546"N	104°01'26.674"W	0.00	
8000.00†	89.842	91.755	6239.32	1995.87	-580.37	1931.00	595643.54	476886.67	32°18'38.513"N	104°01'25.510"W	0.00	
8100.00†	89.842	91.755	6239.60	2095.16	-583.44	2030.96	595743.49	476883.61	32°18'38.480"N	104°01'24.345"W	0.00	
8200.00†	89.842	91.755	6239.87	2194.46	-586.50	2130.91	595843.43	476880.55	32°18'38.447"N	104°01'23.181"W	0.00	
8300.00†	89.842	91.755	6240.15	2293.75	-589.56	2230.86	595943.38	476877.49	32°18'38.414"N	104°01'22.016"W	0.00	
8400.00†	89.842	91.755	6240.42	2393.05	-592.62	2330.81	596043.32	476874.43	32°18'38.381"N	104°01'20.852"W	0.00	
8500.00†	89.842	91.755	6240.70	2492.34	-595.68	2430.77	596143.27	476871.36	32°18'38.347"N	104°01'19.687"W	0.00	

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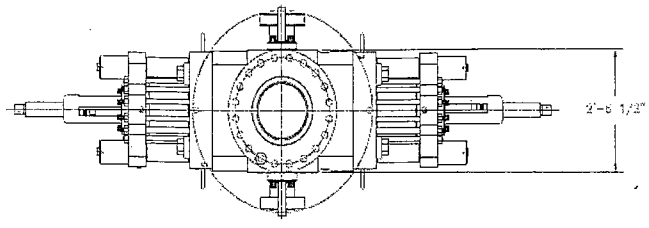
Planned Wellpath Report

Rev-A.0

REFERENCE WELLPATH IDENTIFICATION			
Operator	**OXY Permian**	Slot	**No. 1H SHL**
Area	**Eddy County, NM**	Well	**No.1H**
Field	**(Bank) Sec 18, T 23, R 29E**	Wellbore	**No. 1H PWB**
Facility	**Bank 18 Fed 1H**		

WELLPATH DATA (110 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8600.00†	89.842	91.755	6240.98	2591.64	-598.75	2530.72	596243.21	476868.30	32°18'38.314"N	104°01'18.523"W	0.00	
8700.00†	89.842	91.755	6241.25	2690.94	-601.81	2630.67	596343.15	476865.24	32°18'38.281"N	104°01'17.358"W	0.00	
8800.00†	89.842	91.755	6241.53	2790.23	-604.87	2730.62	596443.10	476862.18	32°18'38.248"N	104°01'16.194"W	0.00	
8900.00†	89.842	91.755	6241.81	2889.53	-607.93	2830.58	596543.04	476859.12	32°18'38.215"N	104°01'15.029"W	0.00	
9000.00†	89.842	91.755	6242.08	2988.82	-611.00	2930.53	596642.99	476856.06	32°18'38.182"N	104°01'13.865"W	0.00	
9100.00†	89.842	91.755	6242.36	3088.12	-614.06	3030.48	596742.93	476852.99	32°18'38.148"N	104°01'12.700"W	0.00	
9200.00†	89.842	91.755	6242.63	3187.41	-617.12	3130.44	596842.88	476849.93	32°18'38.115"N	104°01'11.536"W	0.00	
9300.00†	89.842	91.755	6242.91	3286.71	-620.18	3230.39	596942.82	476846.87	32°18'38.082"N	104°01'10.371"W	0.00	
9400.00†	89.842	91.755	6243.19	3386.00	-623.24	3330.34	597042.77	476843.81	32°18'38.049"N	104°01'09.207"W	0.00	
9500.00†	89.842	91.755	6243.46	3485.30	-626.31	3430.29	597142.71	476840.75	32°18'38.016"N	104°01'08.042"W	0.00	
9600.00†	89.842	91.755	6243.74	3584.60	-629.37	3530.25	597242.65	476837.68	32°18'37.982"N	104°01'06.878"W	0.00	
9700.00†	89.842	91.755	6244.01	3683.89	-632.43	3630.20	597342.60	476834.62	32°18'37.949"N	104°01'05.713"W	0.00	
9800.00†	89.842	91.755	6244.29	3783.19	-635.49	3730.15	597442.54	476831.56	32°18'37.916"N	104°01'04.549"W	0.00	
9900.00†	89.842	91.755	6244.57	3882.48	-638.56	3830.10	597542.49	476828.50	32°18'37.883"N	104°01'03.384"W	0.00	
10000.00†	89.842	91.755	6244.84	3981.78	-641.62	3930.06	597642.43	476825.44	32°18'37.850"N	104°01'02.220"W	0.00	
10100.00†	89.842	91.755	6245.12	4081.07	-644.68	4030.01	597742.38	476822.37	32°18'37.816"N	104°01'01.055"W	0.00	
10200.00†	89.842	91.755	6245.39	4180.37	-647.74	4129.96	597842.32	476819.31	32°18'37.783"N	104°00'59.891"W	0.00	
10300.00†	89.842	91.755	6245.67	4279.66	-650.80	4229.92	597942.27	476816.25	32°18'37.750"N	104°00'58.726"W	0.00	
10400.00†	89.842	91.755	6245.95	4378.96	-653.87	4329.87	598042.21	476813.19	32°18'37.717"N	104°00'57.562"W	0.00	
10419.20	89.842	91.755	6246.00	4398.03	-654.45	4349.06	598061.40	476812.60	32°18'37.710"N	104°00'57.338"W	0.00	No 1H PBHL



LEGEND:
① — 4 1/16"–10M FLANGED END GATE VALVE
② — 4 1/16"–10M FLANGED END GATE VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
③ — 2 1/16"–10M FLANGED END GATE VALVE
④ — 2 1/16"–10M FLANGED END CHECK VALVE
⑤ — DOUBLE STUDDED ADAPTER

SEE LIFT LUG DETAIL

SHAFFER 9(LTEC–COVER SPHERICAL ANNULAR PREVENTER, (API 16A MONOGRAMMED, 13 5/8"–5M WP), 10M BOTTOM FLANGE x 5M STUDDED TOP (WEIGHT – 14,300 LBS WITH SHAFFER API 16A HOT OIL RESISTANT ACRYLONITRILE ELEVENT)

CAMERON UM DOUBLE RAM–TYPE PREVENTER, (API 16A MONOGRAMMED, 13 5/8"–10M WP), WITH 5" CAMERON PIPE RAMS (CAMRAM FRONT PACKERS & TOP SEALS) IN TOP CAVITY AND CAMERON SS SHEARING BLIND RAMS IN BOTTOM CAVITY, BOTTOM FLANGE X STUDDED TOP, (WEIGHT = 21,100 LBS. WITH RAMS)

13 5/8"–10M WP CAMERON DRILLING SPOOL (API 16A MONOGRAMMED), STUDDED TOP x FLANGED BOTTOM WITH 4 1/16"–10M WP FLANGED OUTLETS (WEIGHT APPROXIMATELY 6,000 LBS)

CAMERON, UM–SINGLE RAM–TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"–10M WP), WITH 5" CAMERON PIPE RAMS, (CAMRAM FRONT PACKERS & TOP SEALS) BOTTOM FLANGED STUDDED TOP WEIGHT = 10,900 LBS

3'–11 7/8"

4'–3 7/8"

14'–7 1/2"

1'–8 7/8"

2'–6 7/8"

2'–0"

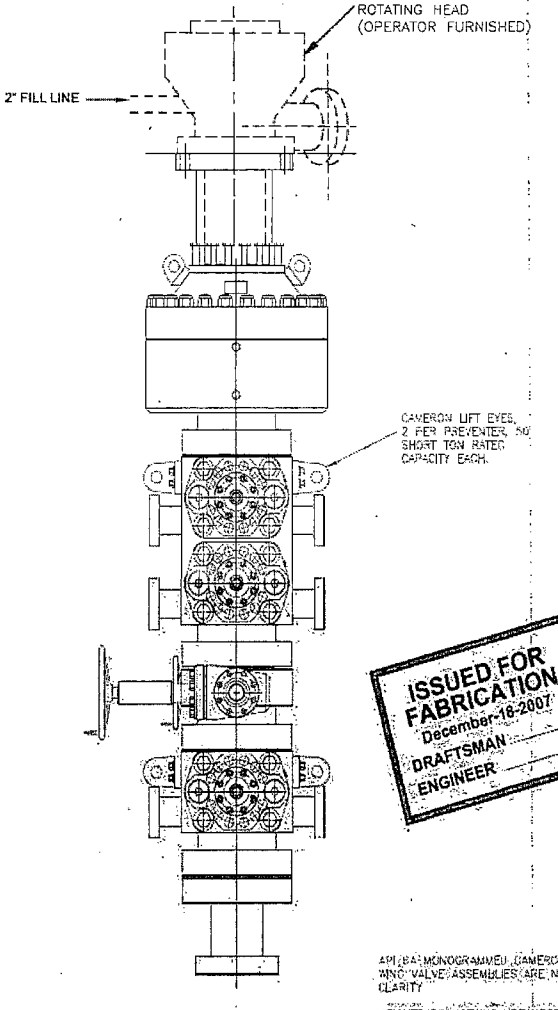
H&P FURNISHED
13 5/8" -10M x 13 5/8" – 5M
ADAPTER SPOOL 2' – 0" LONG

11'–1 5/8" CLOSED

12'–5 3/8" OPERATING

16'–5" OPENED

13 5/8 – 10M BOP STACK
WITH 13 5/8 – 5M ANNULAR



ISSUED FOR FABRICATION
December-18-2007
DRAFTSMAN
ENGINEER

API 16A MONOGRAMMED CAMERON CHOKE AND KILL WING VALVE ASSEMBLIES ARE NOT SHOWN FOR CLARITY

WEIGHTS DO NOT INCLUDE HOSES, ADAPTER SPOOLS OR QUICK CONNECT FITTINGS

REV	DATE	DESCRIPTION	BY	ENGINEERING APPROVAL	DATE
E	12/8/2022	ADDED SHEET 03	JAV		
D	4-10-07	OPERATION REVISED, DOUBLE STUDDED ADAPTER, REVISED 1, 2, V, W & X, AND MUD CHECK VALVE ADDED	JDS		
C	4-04-07	ADDED TO SPACER ADAPTER SPOOL	JDS		
B	03-07-07	ADDED ADAPTER SPOOL	MAL		
A	06-13-02	CORRECTED BOP STACK	MAL		

HELMERICH & PAYNE INTERNATIONAL DRILLING CO.

TITLE: 13 5/8"–10M BOP 3 RAM STACK FLEXRIG3

CUSTOMER: H&P

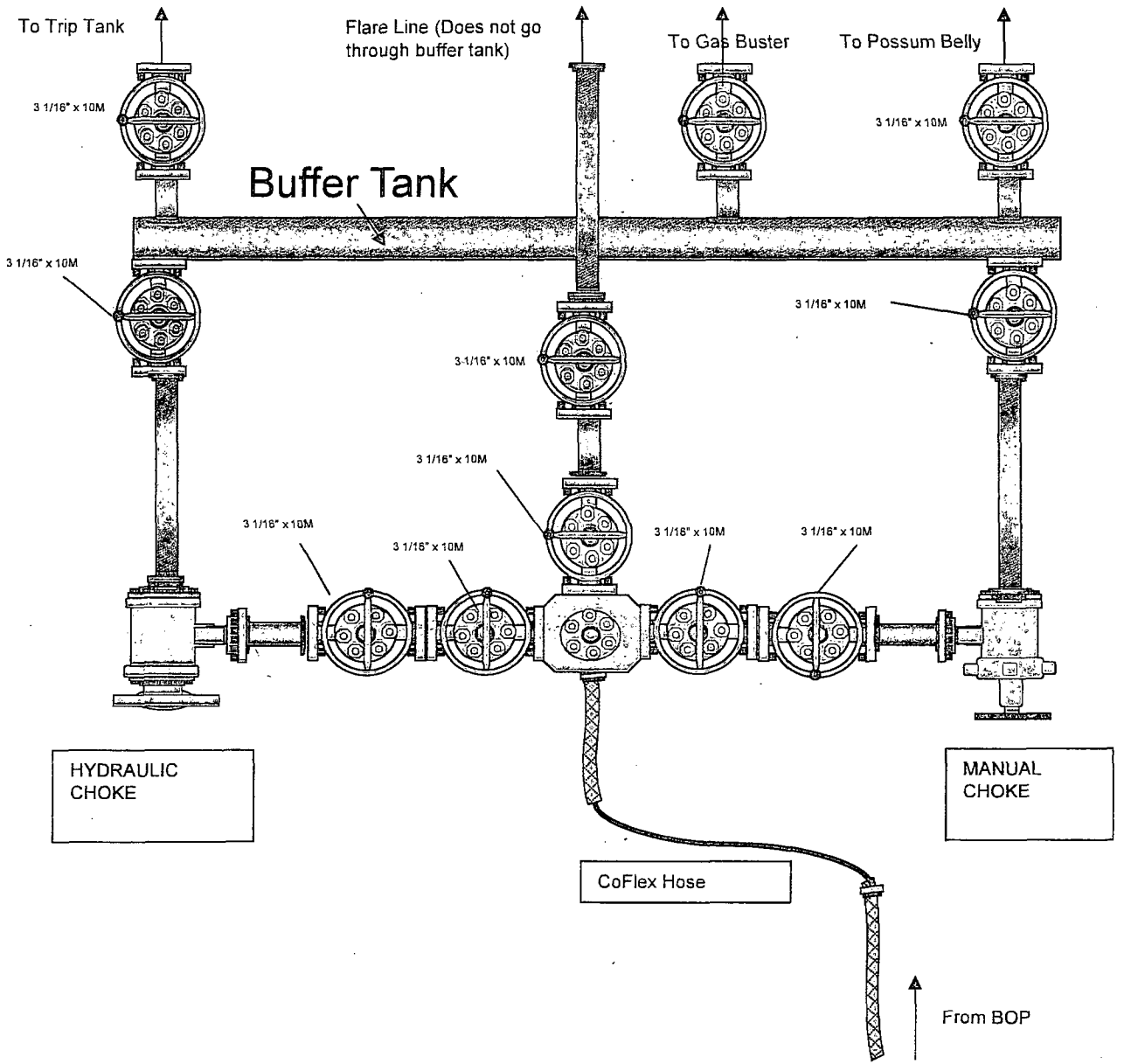
PROJECT: FLEXRIG3

DRAWN: MTS | DATE: 6-25-02 | DRAWING: 210–P1–07 | REV: E

SCALE: 3/4"=1'-0" | SHEET 1 OF 3

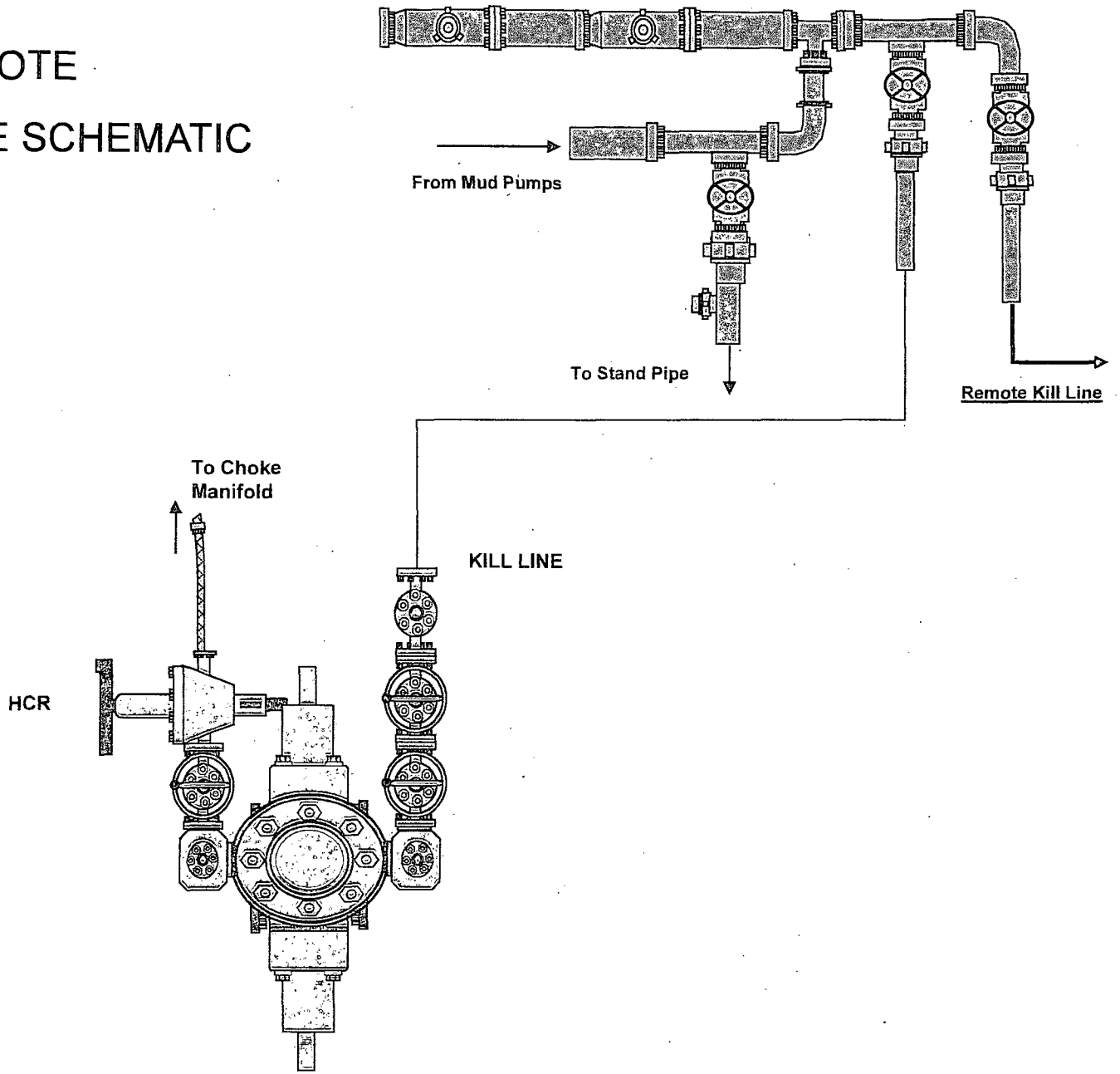
807

FLEX3 STD CHOKE MANIFOLD (COMPREHENSIVE)



CM-1

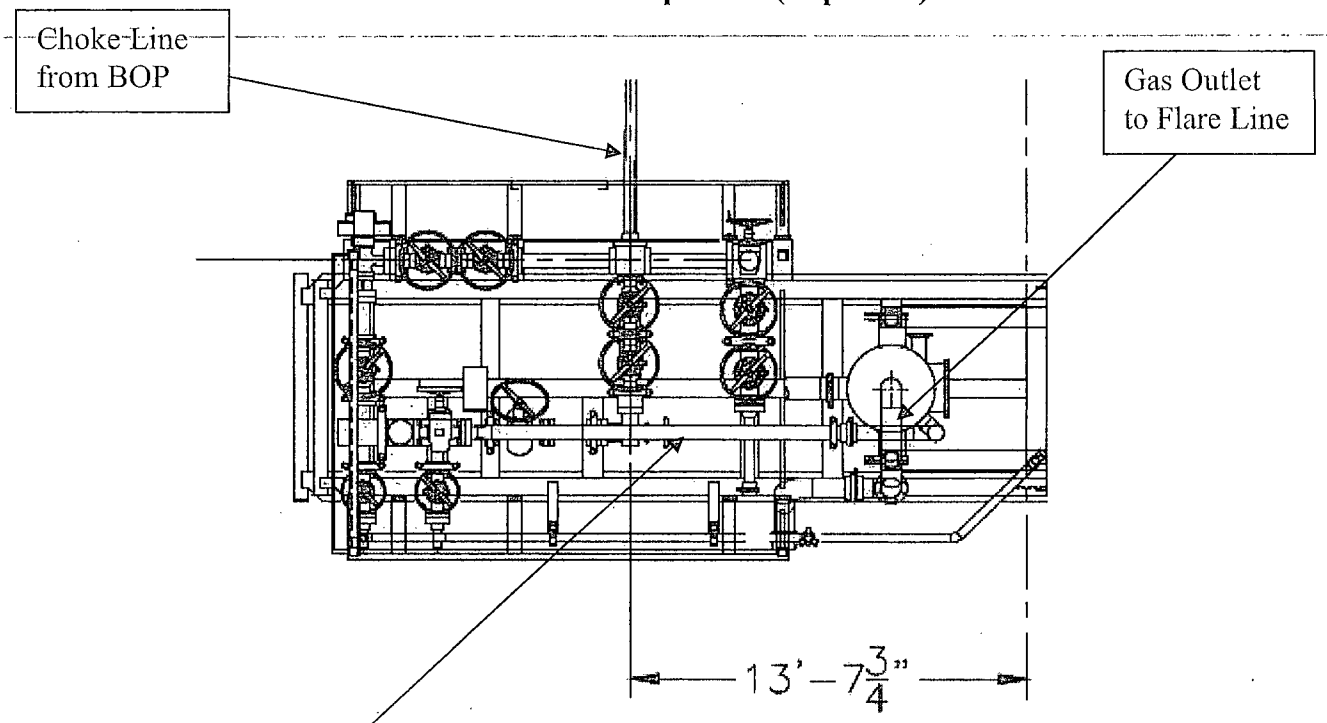
10M REMOTE KILL LINE SCHEMATIC



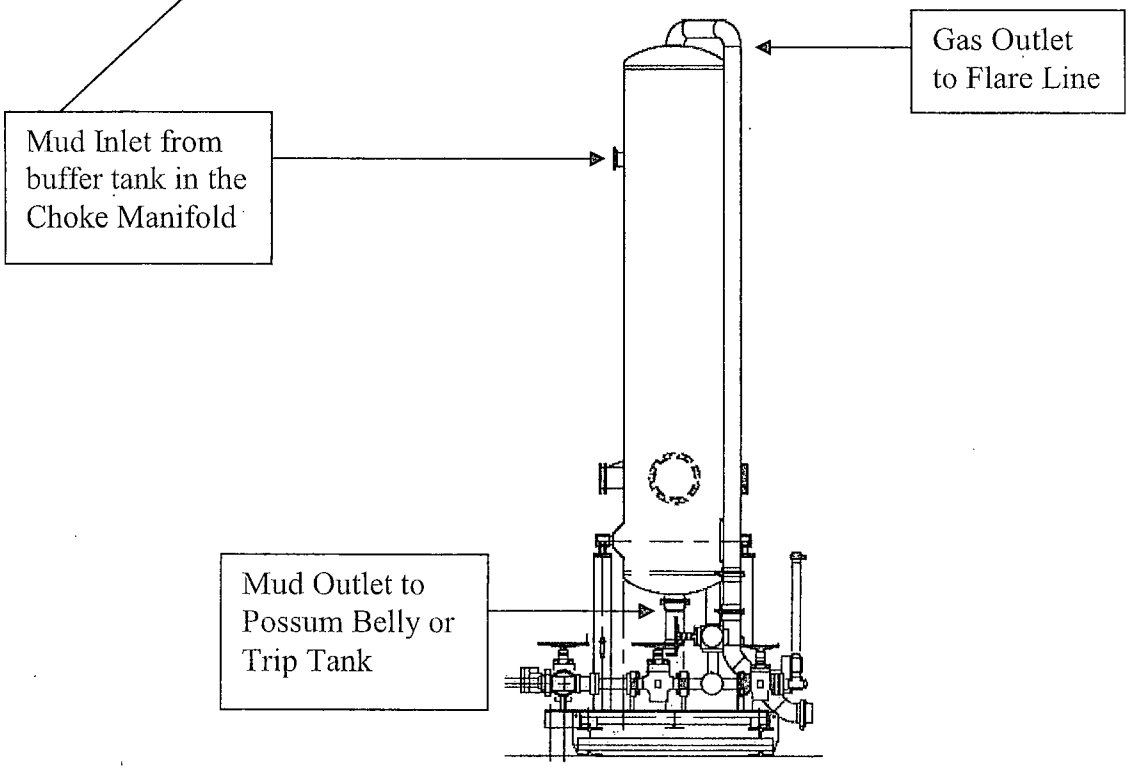
CM-2

CM-3

Choke Manifold – Gas Separator (Top View)

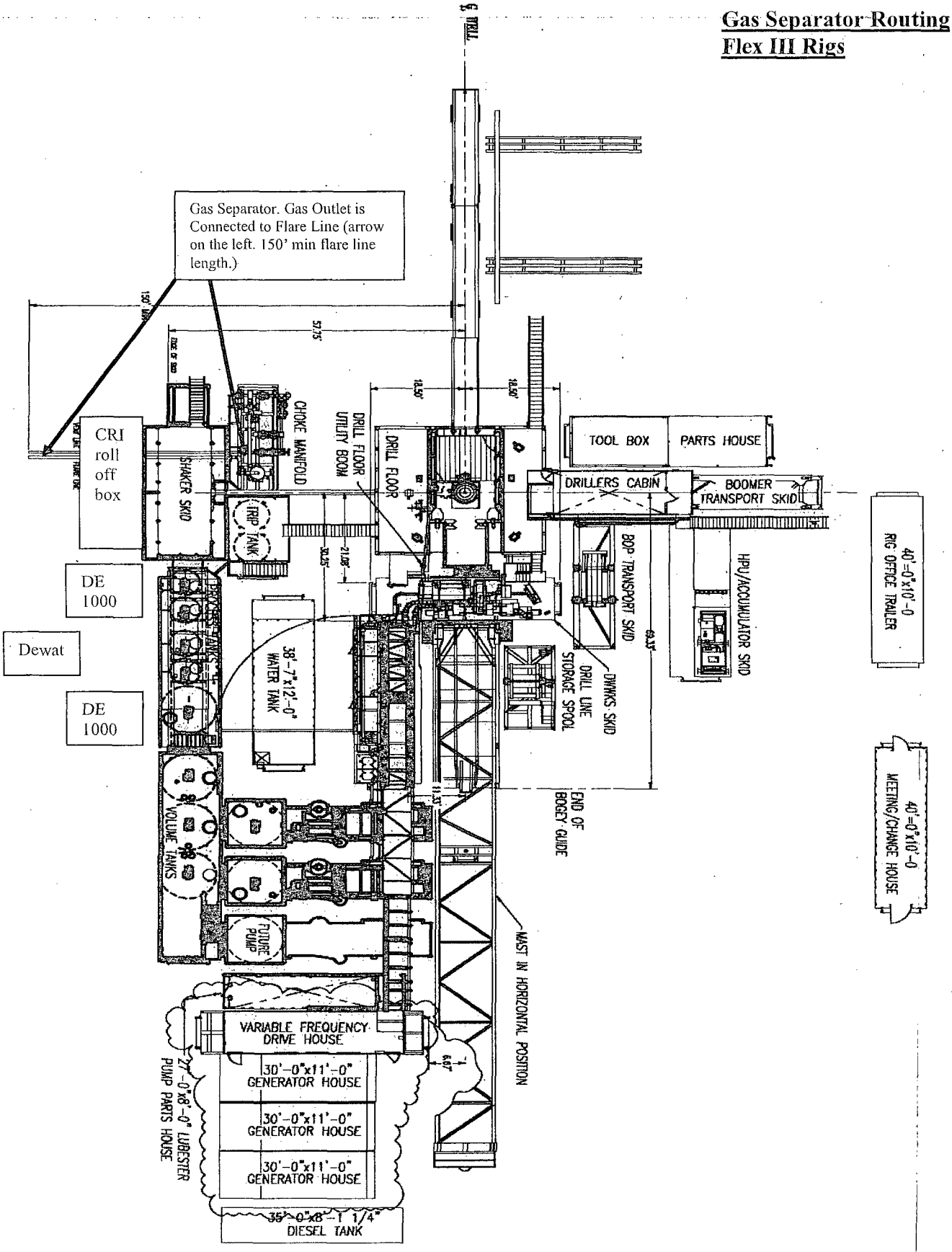


Choke Manifold – Gas Separator (Side View)



CM-4

Gas Separator Routing
Flex III Rigs



Continental CONTITECH

Fluid Technology

Quality Document

CERTIFICATE OF CONFORMITY

Supplier : CONTITECH RUBBER INDUSTRIAL KFT.
Equipment : 6 pcs. Choke and Kill Hose with installed couplings
Type : **3" x 10,67 m WP: 10000 psi**
Supplier File Number : 412638
Date of Shipment : April. 2008
Customer : Phoenix Beattie Co.
Customer P.o. : 002491
Referenced Standards / Codes / Specifications : API Spec 16 C
Serial No.: 52754,52755,52776,52777,52778,52782

STATEMENT OF CONFORMITY

We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Signed : .....

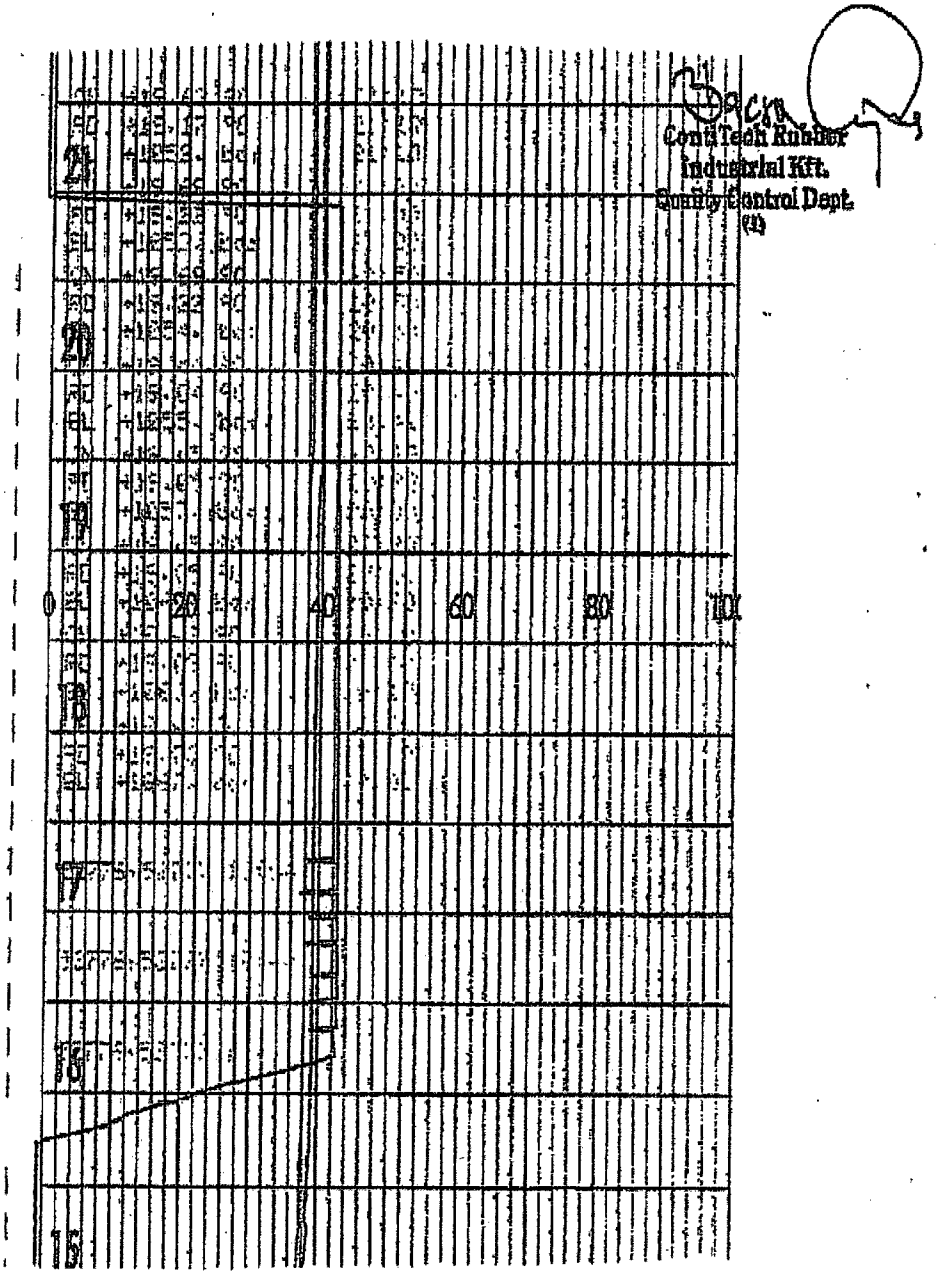
ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

Date: 04. April. 2008

Position: Q.C. Manager

FH-2

Coflex Hose Certification



PHOENIX Beattie

Material Identification Certificate

PA No	006330	Client	HELMERICH & PAYNE INT'L DRILLING	Client Ref	370-369-001	Page	1

Part No	Description	Material Desc	Material Spec	Qty	WO No	Batch No	Test Cert No	Bin No	Drg No	Issue No
HP10CK3A-35-4F1	3" 10K 16C C&K HOSE x 35ft OAL			1	2491	52777/H884		WATER		
SECK3-HPF3	LIFTING & SAFETY EQUIPMENT TO			1	2440	002440		N/STK		
SC725-200CS	SAFETY CLAMP 200MM 7.25T	CARBON STEEL		1	2519	H665		22C		
SC725-132CS	SAFETY CLAMP 132MM 7.25T	CARBON STEEL		1	2242	H139		22		

We hereby certify that these goods have been inspected by our Quality Management System, and to the best of our knowledge are found to conform to relevant industry standards within the requirements of the purchase order as issued to Phoenix Beattie Corporation.

08/23/10

Coflex Hose Certification

FH-3

FH-4

Coflex Hose Certification

Form No 100/12

Phoenix Beattie Corp
11535 Brittmoore Park Drive
Houston, TX 77041
Tel: (832) 327-0141
Fax: (832) 327-0148
E-mail mail@phoenixbeattie.com
www.phoenixbeattie.com

Delivery Note

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	1
Customer / Invoice Address HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119		**Delivery / Address** HELMERICH & PAYNE IDC ATTN: JOE STEPHENSON - RIG 370 13609 INDUSTRIAL ROAD HOUSTON, TX 77015			

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
1	HP10CK3A-35-4F1 3" 10K 16C C&K HOSE x 35ft OAL CW 4.1/16" API SPEC FLANGE E/ End 1: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange End 2: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange c/w BX155 Standard ring groove at each end Suitable for H2S Service Working pressure: 10,000psi Test pressure: 15,000psi Standard: API 16C Full specification Armor Guarding: Included Fire Rating: Not Included Temperature rating: -20 Deg C to +100 Deg C	1	1	0
2	SECK3-HPF3 LIFTING & SAFETY EQUIPMENT TO SUIT HP10CK3-35-F1 2 x 160mm ID Safety Clamps 2 x 244mm ID Lifting Collars & element C's 2 x 7ft Stainless Steel wire rope 3/4" OD 4 x 7.75t Shackles	1	1	0
3	SC725-200CS SAFETY CLAMP 200MM 7.25T C/S GALVANISED	1	1	0

Continued...

FH-5

Coflex Hose Certification

Continental CONTITECH

Fluid Technology

Quality Document

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°:	746	
PURCHASER:	Phoenix Beattie Co.			P.O. N°:	002491	
CONTITECH ORDER N°:	412638	HOSE TYPE:	3" ID	Choke and Kill Hose		
HOSE SERIAL N°:	52777	NOMINAL / ACTUAL LENGTH:		10,67 m		
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration:	60 ~	min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	917 913	AISI 4130	T7998A
4 1/16" Flange end		AISI 4130	26984

INFOCHIP INSTALLED

API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
04. April. 2008		ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

FH-6

Coflex Hose Certification

Form No 100/12

PHOENIX Beattie

Phoenix Beattie Corp
11535 Brittmoore Park Drive
Houston, TX 77041
Tel: (832) 327-0141
Fax: (832) 327-0148
E-mail mail@phoenixbeattie.com
www.phoenixbeattie.com

Delivery Note

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	2

Customer / Invoice Address	Delivery / Address
HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119	HELMERICH & PAYNE IDC ATTN: JOE STEPHENSON - RIG 370 13609 INDUSTRIAL ROAD HOUSTON, TX 77015

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
4	SC725-132CS SAFETY CLAMP 132MM 7.25T C/S GALVANIZED C/W BOLTS	1	1	0
5	00CERT-HYDRO HYDROSTATIC PRESSURE TEST CERTIFICATE	1	1	0
6	00CERT-LOAD LOAD TEST CERTIFICATES	1	1	0
7	00FREIGHT INBOUND / OUTBOUND FREIGHT PRE-PAY & ADD TO FINAL INVOICE NOTE: MATERIAL MUST BE ACCOMPANIED BY PAPERWORK INCLUDING THE PURCHASE ORDER, RIG NUMBER TO ENSURE PROPER PAYMENT	1	1	0

Phoenix Beattie Inspection Signature : _____

Received in Good Condition : Signature _____

Print Name _____

Date _____

All goods remain the property of Phoenix Beattie until paid for in full. Any damage or shortage on this delivery must be advised within 5 days. Returns may be subject to a handling charge.

CLEZ-3

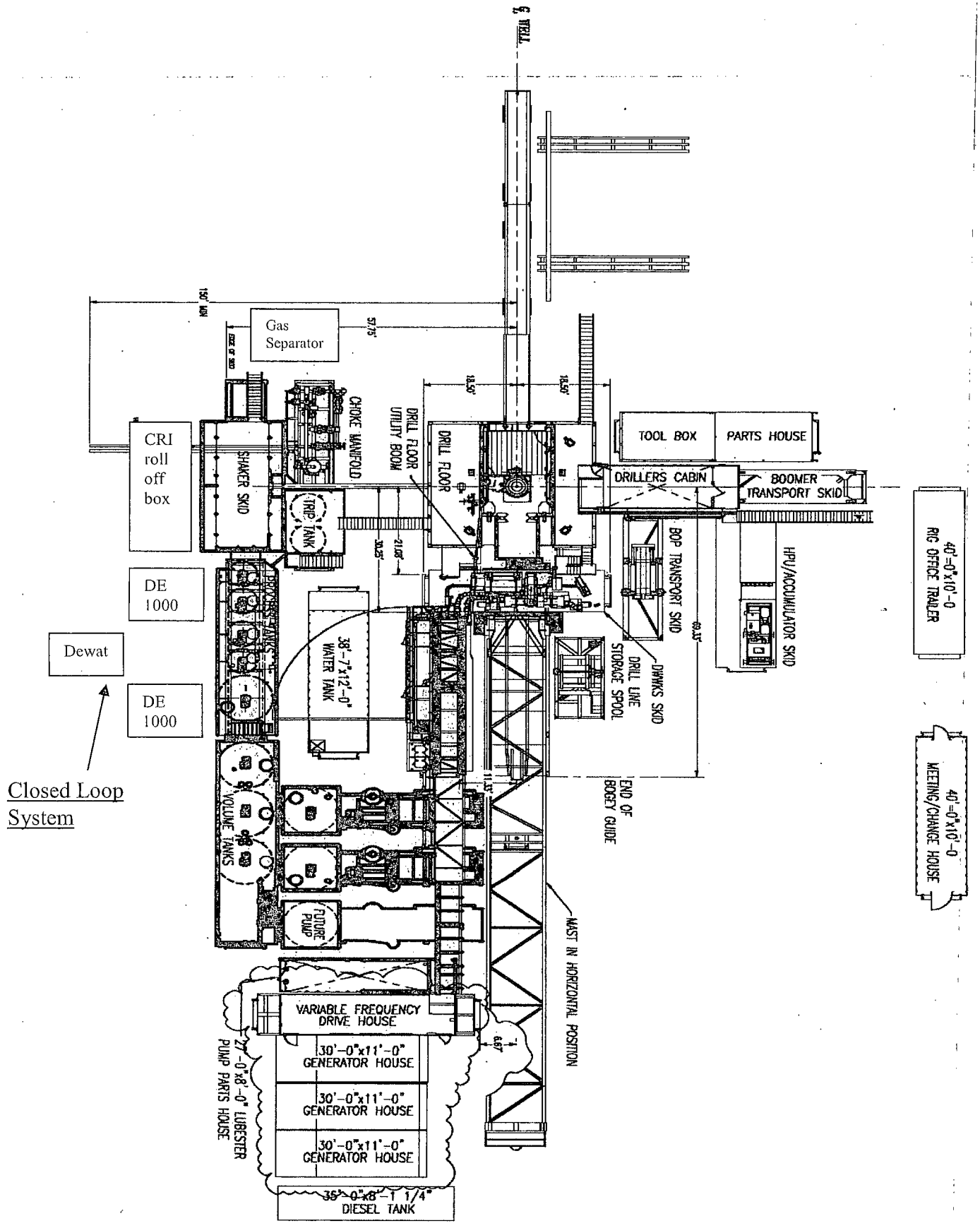
New Mexico Drilling Daily Circulating System Inspection For Closed Loop Systems

Wellname:		Permit #:		Rig Mobe Date:	
County:				Rig Demobe Date:	

Inspection Date	Time	By Whom	Any drips or leaks from steel tanks, lines or pumps not contained?* Explain.	Has any hazardous waste been disposed of in system?

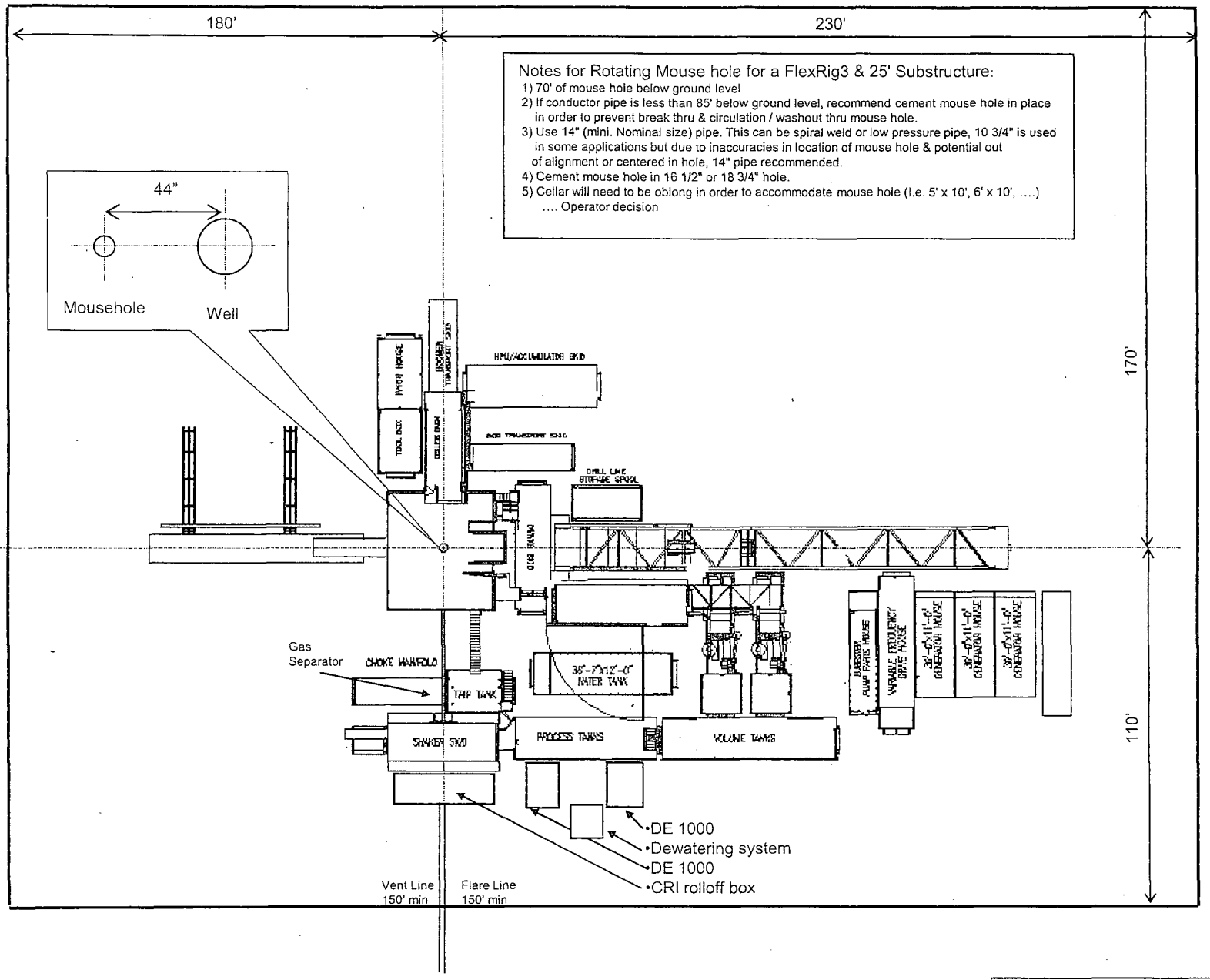
All circulating systems to be inspected DAILY during drilling operations.
***Any leak of the steel tanks, lines or pumps shall be reported to the NMOCD and repaired within 48 hours.**

CLE2-4


Gas Separator
CHOKE MANIFOLD
DRILL FLOOR UTILITY BOOM
DRILL FLOOR
TOOL BOX
PARTS HOUSE
DRILLERS CABIN
BOOMER TRANSPORT SKID
CRI roll off box
SHAKER SKID
TRIP TANK
DE 1000
Dewat
DE 1000
38'-7"x12'-0" WATER TANK
BOP TRANSPORT SKID
DRILL LINE STORAGE SPOOL
DRWKS SKID
HPU/ACCUMULATOR SKID
40'-0"x10'-0 RIG OFFICE TRAILER
40'-0"x10'-0 MEETING/CHANGE HOUSE
END OF BOGEY GUIDE
MAST IN HORIZONTAL POSITION
VOLUME TANKS
FUTURE PUMP
VARIABLE FREQUENCY DRIVE HOUSE
30'-0"x11'-0" GENERATOR HOUSE
30'-0"x11'-0" GENERATOR HOUSE
30'-0"x11'-0" GENERATOR HOUSE
27'-0"x8'-0" LUBESTER PUMP PARTS HOUSE
35'-0"x8'-1 1/4" DIESEL TANK
Closed Loop System

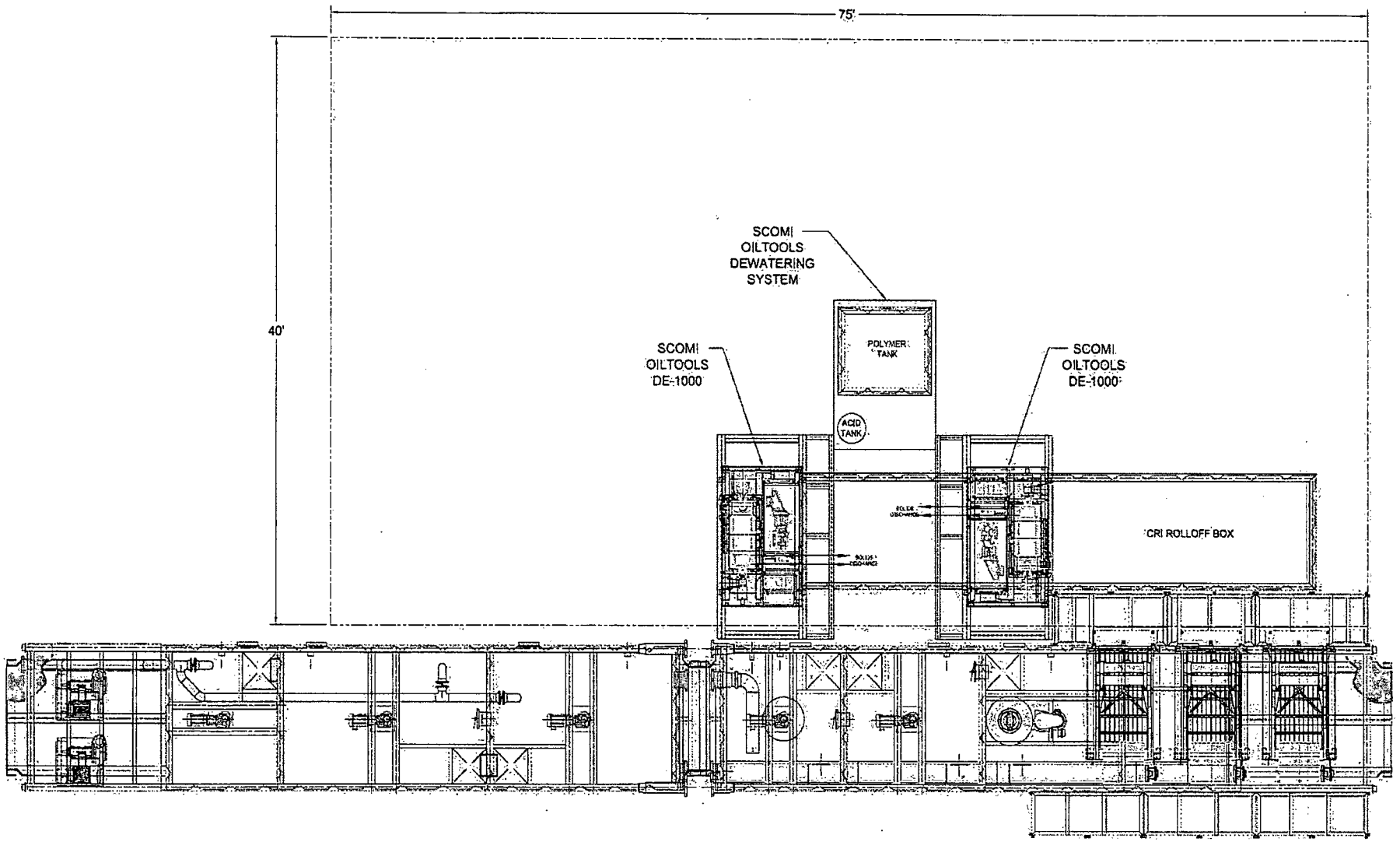
OXY FLEX III PAD (SCOMI Closed Loop System)

Level Area-No Caliche-For Offices and Living Quarters



CLEZ-5

BILL OF MATERIAL			
ITEM	QTY.	DESCRIPTION	LENGTH / WEIGHT



NO.	REVISIONS	BY	CHK'D	APP'D	DATE
A	ADDED PAGE 2 TO SHOW P&ID	PDL	BF		3/12/09

1. ALL STRUCTURAL MATERIAL SHALL BE ASTM – A36.
2. ALL PIPE (SCH. 40) MATERIAL SA 106 Gr. B
3. ALL FLANGES SHALL BE 300#, 150# is MATERIAL SA 105.
4. ALL FITTINGS SCH. 40 MATERIAL SHALL BE SA 234 Gr. WPB.
5. TANK FABRICATION SHALL BE IN ACCORDANCE WITH API-650.

TITLE:
CLOSED LOOP SYSTEM BASIC LAYOUT AND TIE IN OXY – H&P FLEX RIGS / PG 1 OF 2

DRAWN BY	DATE	CHECKED BY	DATE
PDL	10/30/08		
APPROVED	DATE	SCALE	SIZE
		NTS	D

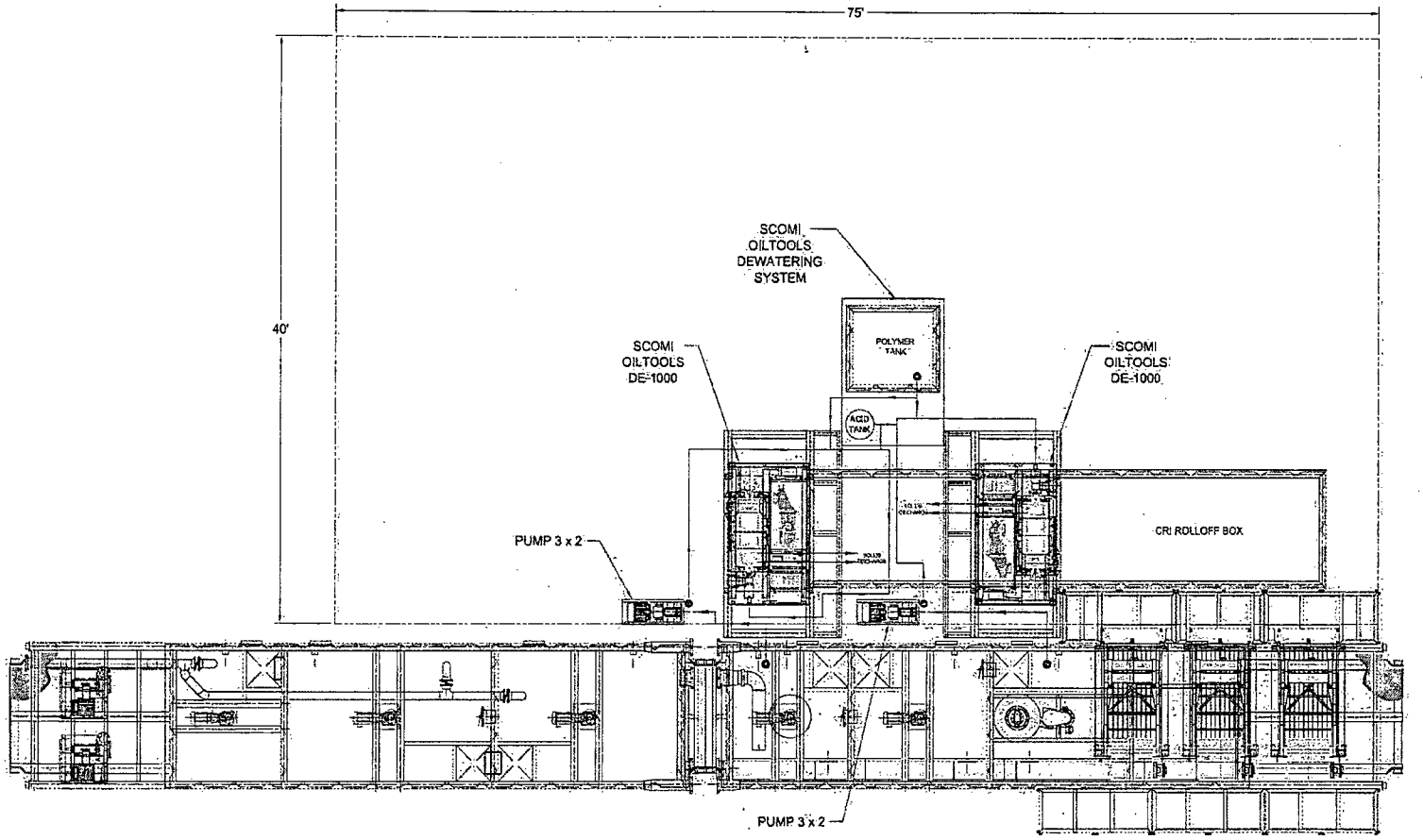
Scomi
421 N. Sam Houston Parkway East, Suite 300,
Houston, Texas 77060
PHONE: (281)-260-6014 FAX: (281)-260-6969

JOB NO.	DRAWING NO.	REV.
	521S-014	A

CLEZ-6

BILL OF MATERIAL

ITEM	QTY.	DESCRIPTION	LENGTH	WEIGHT



REV	DESCRIPTION	BY	DATE	APP'D	DATE
A	ADDED PAGE 2 TO SHOW P&ID	PDL	BP		9/1/2009

1. ALL STRUCTURAL MATERIAL SHALL BE ASTM - A36.
2. ALL PIPE SCH. 40 MATERIAL SA 106 Gr. B.
3. ALL FLANGES SHALL BE SCH. 150# & MATERIAL SA 105.
4. ALL FITTINGS SCH. 40 MATERIAL SHALL BE SA 234 Gr. WPB
5. TANK FABRICATION SHALL BE IN ACCORDANCE WITH API-650.

TITLE :
CLOSED LOOP SYSTEM
BASIC LAYOUT AND TIE IN
OXY - H&P - FLEX RIGS / PG 2 OF 2

DRAWN BY	DATE	CHECKED BY	DATE
PDL	10/30/08		
APPROVED	DATE	SCALE	SIZE / DWG.
		NTS	D

Scomi

821 N. Sam Houston Parkway East, Suite 300,
Houston, Texas 77060
PHONE: (281)-260-6018, FAX: (281)-260-6069

JOB NO.	DRAWING NO.	REV.
	521S-014	A

CLEZ-7

H2S-1

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Bank 18 Fed Com 1H

Open drill site. No homes or buildings are near the proposed location.

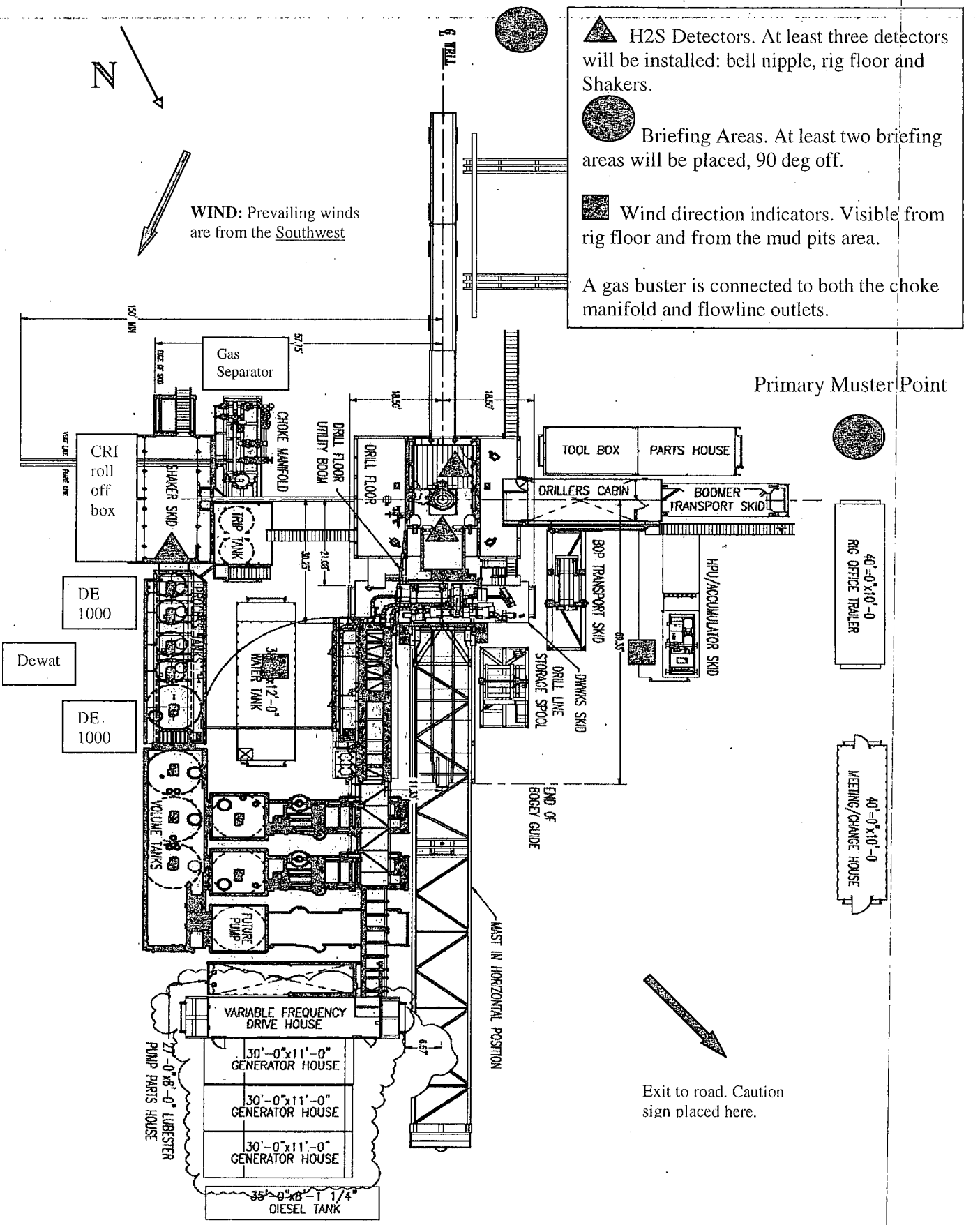
1. Escape

   In the event of a H2S gas release, personnel shall escape upwind of wellbore and to a safe distance away with the entrance to location blocked. The primary escape route is the lease road entrance/exit on the Northwest side of the location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken which will be determined by the current wind direction at the time of the release.

H2S-2

Rig Layout

Secondary Muster Point



H2S-3

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
New Mexico

Scope

This contingency plan establishes guidelines for the public, all company employees, and contract employees who's work activities may involve exposure to hydrogen sulfide (H2S) gas.
While drilling this well, it is possible to encounter H2S bearing formations. At all times, the first barrier to control H2S emissions will be the drilling fluid, which will have a density high enough to control influx.

Objective

1. Provide an immediate and predetermined response plan to any condition when H2S is detected. All H2S detections in excess of 10 parts per million (ppm) concentration are considered an Emergency.

2. Prevent any and all accidents, and prevent the uncontrolled release of hydrogen sulfide into the atmosphere.

3. Provide proper evacuation procedures to cope with emergencies.

4. Provide immediate and adequate medical attention should an injury occur.

H2S-4

Discussion

Implementation:	This plan with all details is to be fully implemented before drilling to commence.
Emergency response Procedure:	This section outlines the conditions and denotes steps to be taken in the event of an emergency.
Emergency equipment Procedure:	This section outlines the safety and emergency equipment that will be required for the drilling of this well.
Training provisions:	This section outlines the training provisions that must be adhered to prior to drilling.
Drilling emergency call lists:	Included are the telephone numbers of all persons to be contacted should an emergency exist.
Briefing:	This section deals with the briefing of all people involved in the drilling operation.
Public safety:	Public safety personnel will be made aware of any potential evacuation and any additional support needed.
Check lists:	Status check lists and procedural check lists have been included to insure adherence to the plan.
General information:	A general information section has been included to supply support information.

Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on the well:

1. The hazards and characteristics of H2S.
2. Proper use and maintenance of personal protective equipment and life support systems.
3. H2S detection.
4. Proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
5. Proper techniques for first aid and rescue procedures.
6. Physical effects of hydrogen sulfide on the human body.
7. Toxicity of hydrogen sulfide and sulfur dioxide.
8. Use of SCBA and supplied air equipment.
9. First aid and artificial respiration.
10. Emergency rescue.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile strength tubular is to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling a well, blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan.

H2S training refresher must have been taken within one year prior to drilling the well. Specifics on the well to be drilled will be discussed during the pre-spud meeting. H2S and well control (choke) drills will be performed while drilling the well, at least on a weekly basis. This plan shall be available in the well site. All personnel will be required to carry the documentation proving that the H2S training has been taken.

Service company and visiting personnel

A. Each service company that will be on this well will be notified if the zone contains H2S.

B. Each service company must provide for the training and equipment of their employees before they arrive at the well site.

C. Each service company will be expected to attend a well site briefing

H2S-6

Emergency Equipment Requirements

1. Well control equipment

The well shall have hydraulic BOP equipment for the anticipated pressures. Equipment is to be tested on installation and follow Oxy Well Control standard, as well as BLM Onshore Order #2.

Special control equipment:

A. Hydraulic BOP equipment with remotely operated choke remote control on ground.
B. Rotating head
C. Gas buster equipment shall be installed before drilling out of surface pipe.

2. Protective equipment for personnel

A. Four (4) 30-minute positive pressure air packs (2 at each briefing area) on location.

B. Adequate fire extinguishers shall be located at strategic locations.

C. Radio / cell telephone communication will be available at the rig.

- Rig floor and trailers.
- Vehicle.

3. Hydrogen sulfide sensors and alarms

A. H2S sensor with alarms will be located on the rig floor, at the bell nipple, and at the flow line. These monitors will be set to alarm at 10 ppm with strobe light, and audible alarm.
B. Hand operated detectors with tubes.
C. H2S monitor tester (to be provided by contract Safety Company.)
D. There shall be one combustible gas detector on location at all times.

4. Visual Warning Systems

A. One sign located at each location entrance with the following language:

Caution – potential poison gas
Hydrogen sulfide
No admittance without authorization

Wind sock – wind streamers:

A. One 36" (in length) wind sock located at protection center, at height visible from rig floor.
B. One 36" (in length) wind sock located at height visible from pit areas.

Condition flags

A. One each condition flag to be displayed to denote conditions.

green – normal conditions
yellow – potential danger
red – danger, H2S present

B. Condition flag shall be posted at each location sign entrance.

5. Mud Program

The mud program is designed to minimize the risk of having H2S and other formation fluids at surface. Proper mud weight and safe drilling practices will be applied. H2S scavengers will be used to minimize the hazards while drilling. Below is a summary of the drilling program.

Mud inspection devices:

Garrett gas train or hatch tester for inspection of sulfide concentration in mud system.

6. Metallurgy

A. Drill string, casing, tubing, wellhead, blowout preventers, drilling spools or adapters, kill lines, choke manifold, lines and valves shall be suitable for the H2S service.
B. All the elastomers, packing, seals and ring gaskets shall be suitable for H2S service.

7. Well Testing

No drill stem test will be performed on this well.

8. Evacuation plan

Evacuation routes should be established prior to well spud for each well and discussed with all rig personnel.

9. Designated area

A. Parking and visitor area: all vehicles are to be parked at a predetermined safe distance from the wellhead.
B. There will be a designated smoking area.
C. Two briefing areas on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds perpendicularly, or at a 45-degree angle if wind direction tends to shift in the area.

Emergency procedures

A. In the event of any evidence of H2S level above 10 ppm, take the following steps:

1. The Driller will pick up off bottom, shut down the pumps, slow down the pipe rotation.

2. Secure and don escape breathing equipment, report to the upwind designated safe briefing / muster area.

3. All personnel on location will be accounted for and emergency search should begin for any missing, the Buddy System will be implemented.

4. Order non-essential personnel to leave the well site, order all essential personnel out of the danger zone and upwind to the nearest designated safe briefing / muster area.

5. Entrance to the location will be secured to a higher level than our usual "Meet and Greet" requirement, and the proper condition flag will be displayed at the entrance to the location.

6. Take steps to determine if the H2S level can be corrected or suppressed and, if so, proceed as required.

B. If uncontrollable conditions occur:

1. Take steps to protect and/or remove any public in the down-wind area from the rig – partial evacuation and isolation. Notify necessary public safety personnel and appropriate regulatory entities (i.e. BLM) of the situation.

2. Remove all personnel to the nearest upwind designated safe briefing / muster area or off location.

3. Notify public safety personnel of safe briefing / muster area.

4. An assigned crew member will blockade the entrance to the location. No unauthorized personnel will be allowed entry to the location.

5. Proceed with best plan (at the time) to regain control of the well. Maintain tight security and safety procedures.

C. Responsibility:

1. Designated personnel.

a. Shall be responsible for the total implementation of this plan.
b. Shall be in complete command during any emergency.
c. Shall designate a back-up.

All personnel:	1. On alarm, don escape unit and report to the nearest upwind designated safe briefing / muster area upw 2. Check status of personnel (buddy system). 3. Secure breathing equipment. 4. Await orders from supervisor.
Drill site manager:	1. Don escape unit if necessary and report to nearest upwind designated safe briefing / muster area. 2. Coordinate preparations of individuals to return to point of release with tool pusher and driller (using the buddy system). 3. Determine H2S concentrations. 4. Assess situation and take control measures.
Tool pusher:	1. Don escape unit Report to up nearest upwind designated safe briefing / muster area. 2. Coordinate preparation of individuals to return to point of release with tool pusher drill site manager (using the buddy system). 3. Determine H2S concentration. 4. Assess situation and take control measures.
Driller:	1. Don escape unit, shut down pumps, continue rotating DP.

	2.	Check monitor for point of release.
	3.	Report to nearest upwind designated safe briefing / muster area.
	4.	Check status of personnel (in an attempt to rescue, use the buddy system).
	5.	Assigns least essential person to notify Drill Site Manager and tool pusher by quickest means in case of their absence.
	6.	Assumes the responsibilities of the Drill Site Manager and tool pusher until they arrive should they be absent.
Derrick man Floor man #1 Floor man #2	1.	Will remain in briefing / muster area until instructed by supervisor.
Mud engineer:	1.	Report to nearest upwind designated safe briefing / muster area.
	2.	When instructed, begin check of mud for ph and H2S level. (Garett gas train.)
Safety personnel:	1.	Mask up and check status of all personnel and secure operations as instructed by drill site manager.

Taking a kick

When taking a kick during an H2S emergency, all personnel will follow standard Well control procedures after reporting to briefing area and masking up.

Open-hole logging

All unnecessary personnel off floor. Drill Site Manager and safety personnel should monitor condition, advise status and determine need for use of air equipment.

Running casing or plugging

Following the same "tripping" procedure as above. Drill Site Manager and safety personnel should determine if all personnel have access to protective equipment.

Ignition procedures

The decision to ignite the well is the responsibility of the operator (Oxy Drilling Management). The decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope controlling the blowout under the prevailing conditions at the well.

Instructions for igniting the well

1. Two people are required for the actual igniting operation. They must wear self-contained breathing units and have a safety rope attached. One man (tool pusher or safety engineer) will check the atmosphere for explosive gases with the gas monitor. The other man is responsible for igniting the well.
2. Primary method to ignite: 25 mm flare gun with range of approximately 500 feet.
3. Ignite upwind and do not approach any closer than is warranted.
4. Select the ignition site best for protection, and which offers an easy escape route.
5. Before firing, check for presence of combustible gas.
6. After lighting, continue emergency action and procedure as before.
7. All unassigned personnel will remain in briefing area until instructed by supervisor or directed by the Drill Site Manager.

Remember: After well is ignited, burning hydrogen sulfide will convert to sulfur dioxide, which is also highly toxic. **Do not assume the area is safe after the well is ignited.**

Status check list

Note: All items on this list must be completed before drilling to production casing point.

1. H2S sign at location entrance.
2. Two (2) wind socks located as required.
3. Four (4) 30-minute positive pressure air packs (2 at each Briefing area) on location for all rig personnel and mud loggers.
4. Air packs inspected and ready for use.
5. Cascade system and hose line hook-up as needed.
6. Cascade system for refilling air bottles as needed.
7. Condition flag on location and ready for use.
8. H2S detection system hooked up and tested.
9. H2S alarm system hooked up and tested.
10. Hand operated H2S detector with tubes on location.
11. 1 – 100' length of nylon rope on location.
12. All rig crew and supervisors trained as required.
13. All outside service contractors advised of potential H2S hazard on well.
14. No smoking sign posted and a designated smoking area identified.
15. Calibration of all H2S equipment shall be noted on the IADC report.

Checked by:_____ Date:_____

Procedural check list during H2S events

Perform each tour:

1. Check fire extinguishers to see that they have the proper charge.

2. Check breathing equipment to ensure that it in proper working order.

3. Make sure all the H2S detection system is operative.

Perform each week:

1. Check each piece of breathing equipment to make sure that demand or forced air regulator is working. This requires that the bottle be opened and the mask assembly be put on tight enough so that when you inhale, you receive air or feel air flow.

2. BOP skills (well control drills).

3. Check supply pressure on BOP accumulator stand by source.

4. Check breathing equipment mask assembly to see that straps are loosened and turned back, ready to put on.

5. Check pressure on breathing equipment air bottles to make sure they are charged to full volume. (Air quality checked for proper air grade "D" before bringing to location)

6. Confirm pressure on all supply air bottles.

7. Perform breathing equipment drills with on-site personnel.

8. Check the following supplies for availability.

   A. Emergency telephone list.
   B. Hand operated H2S detectors and tubes.

H2S-14

General evacuation plan

1. When the company approved supervisor (Drill Site Manager, consultant, rig pusher, or driller) determines the H2S gas cannot be limited to the well location and the public will be involved, he will activate the evacuation plan.

2. Drill Site Manager or designee will notify local government agency that a hazardous condition exists and evacuation needs to be implemented.

3. Company or contractor safety personnel that have been trained in the use of H2S detection equipment and self-contained breathing equipment will monitor H2S concentrations, wind directions, and area of exposure. They will delineate the outer perimeter of the hazardous gas area. Extension to the evacuation area will be determined from information gathered.

4. Law enforcement personnel (state police, police dept., fire dept., and sheriff's dept.) Will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

5. After the discharge of gas has been controlled, company safety personnel will determine when the area is safe for re-entry.

Important: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

Emergency actions

Well blowout – if emergency

1. Evacuate all personnel to "Safe Briefing / Muster Areas" or off location if needed.
2. If sour gas – evacuate rig personnel.
3. If sour gas – evacuate public within 3000 ft radius of exposure.
4. Don SCBA and shut well in if possible using the buddy system.
5. Notify Drilling Superintendent and call 911 for emergency help (fire dept and ambulance) if needed.
6. Implement the Blowout Contingency Plan, and Drilling Emergency Action Plan.
6. Give first aid as needed.

Person down location/facility

1. If immediately possible, contact 911. Give location and wait for confirmation.
2. Don SCBA and perform rescue operation using buddy system.

Toxic effects of hydrogen sulfide

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 ppm, which is .001% by volume. Hydrogen sulfide is heavier than air (specific gravity – 1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in table i. Physical effects at various hydrogen sulfide exposure levels are shown in table ii.

Table i
Toxicity of various gases

Common name	Chemical formula	Specific gravity (sc=1)	Threshold limit (1)	Hazardous limit (2)	Lethal concentration (3)
Hydrogen Cyanide	Hcn	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H2S	1.18	10 ppm	250 ppm/hr	600 ppm
Sulfur Dioxide	So2	2.21	5 ppm	-	1000 ppm
Chlorine	Cl2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	Co	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	Co2	1.52	5000 ppm	5%	10%
Methane	Ch4	0.55	90,000 ppm	Combustible above 5% in air	

1) threshold limit – concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects.

2) hazardous limit – concentration that will cause death with short-term exposure.

3) lethal concentration – concentration that will cause death with short-term exposure.

Toxic effects of hydrogen sulfide

Table ii
Physical effects of hydrogen sulfide

Percent (%)	Ppm	Concentration Grains 100 std. Ft3*	Physical effects
0.001	<10	00.65	Obvious and unpleasant odor.

0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; stings eyes and throat.
0.050	500	32.96	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; followed by death within minutes.

*at 15.00 psia and 60'f.

Use of self-contained breathing equipment (SCBA)

1. Written procedures shall be prepared covering safe use of SCBA's in dangerous atmosphere, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available SCBA.

2 SCBA's shall be inspected frequently at random to insure that they are properly used, cleaned, and maintained.

3. Anyone who may use the SCBA's shall be trained in how to insure proper face-piece to face seal. They shall wear SCBA's in normal air and then wear them in a test atmosphere. (note: such items as facial hair {beard or sideburns} and eyeglasses will not allow proper seal.) Anyone that may be reasonably expected to wear SCBA's should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses or contact lenses.

4. Maintenance and care of SCBA's:

   a. A program for maintenance and care of SCBA's shall include the following:
      1. Inspection for defects, including leak checks.
      2. Cleaning and disinfecting.
      3. Repair.
      4. Storage.

   b. Inspection, self-contained breathing apparatus for emergency use shall be inspected monthly.
      1. Fully charged cylinders.
      2. Regulator and warning device operation.
      3. Condition of face piece and connections.
      4. Rubber parts shall be maintained to keep them pliable and prevent deterioration.

   c. Routinely used SCBA's shall be collected, cleaned and disinfected as frequently as necessary to insure proper protection is provided.

5. Persons assigned tasks that requires use of self-contained breathing equipment shall be certified physically fit (medically cleared) for breathing equipment usage at least annually.

6. SCBA's should be worn when:

   A. Any employee works near the top or on top of any tank unless test reveals less than 10 ppm of H2S.

B. When breaking out any line where H2S can reasonably be expected.

C. When sampling air in areas to determine if toxic concentrations of H2S exists.

D. When working in areas where over 10 ppm H2S has been detected.

E. At any time there is a doubt as to the H2S level in the area to be entered.

Rescue
First aid for H2S poisoning

Do not panic!

Remain calm – think!

1. Don SCBA breathing equipment.

2. Remove victim(s) utilizing buddy system to fresh air as quickly as possible. (go up-wind from source or at right angle to the wind. Not down wind.)

3. Briefly apply chest pressure – arm lift method of artificial respiration to clean the victim's lungs and to avoid inhaling any toxic gas directly from the victim's lungs.

4. Provide for prompt transportation to the hospital, and continue giving artificial respiration if needed.

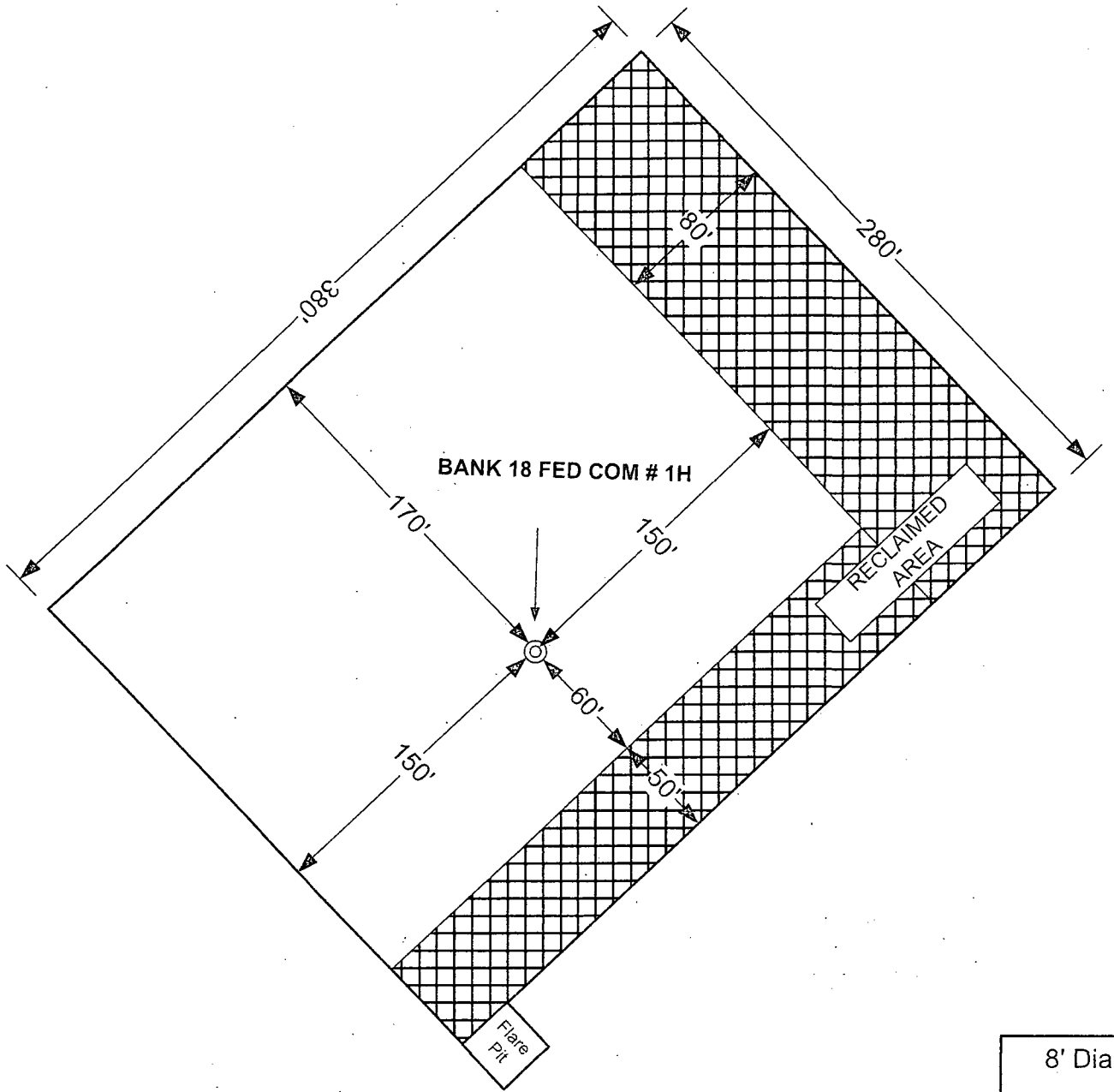
5. Hospital(s) or medical facilities need to be informed, before-hand, of the possibility of H2S gas poisoning – no matter how remote the possibility is.

6. Notify emergency room personnel that the victim(s) has been exposed to H2S gas.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration.

Revised CM 6/27/2012

Connected Wellsite Layout

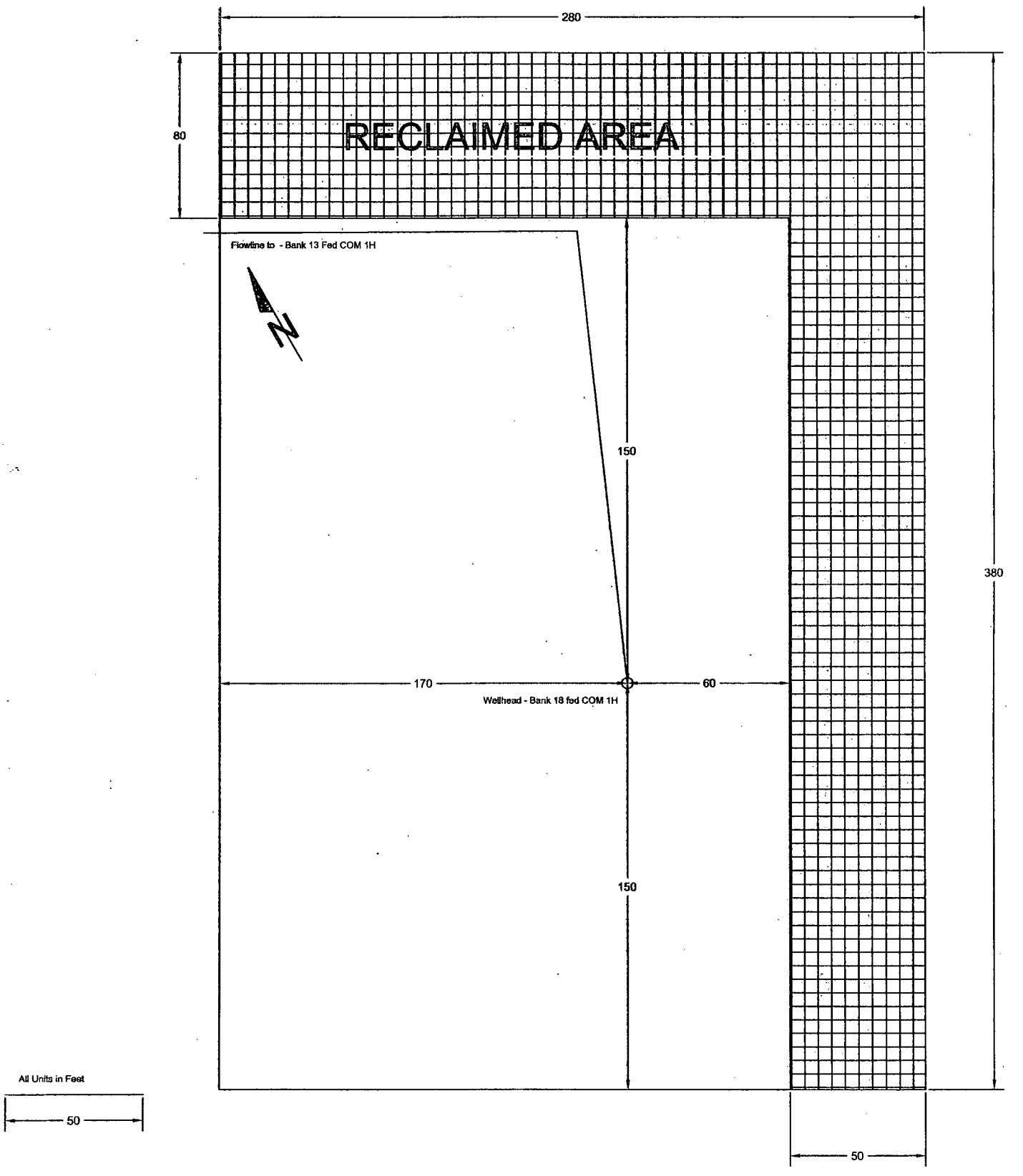


8' Diameter x 8' Deep Tinhorn Cellar

REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE

H&P 474 RIG DIAGRAM
BANK 18 FED COM # 1H
V-Door - Southwest
EDDY COUNTY, NEW MEXICO

Corrected Facility Layout

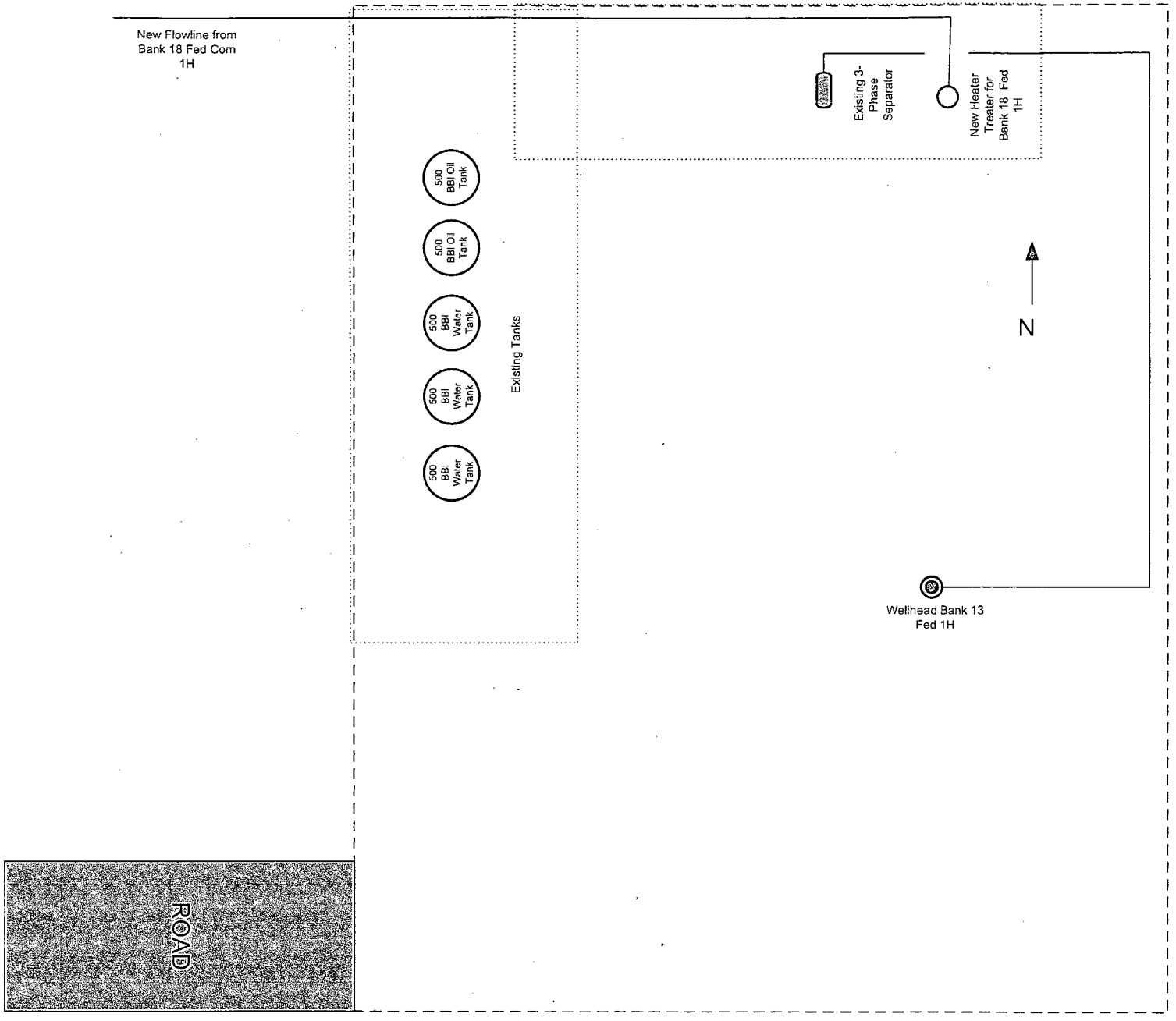


REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE
A	3/3/13	Plot Plan for Permiting	RJG			RJG	03/03/2013

PRODUCTION FACILITY LAYOUT

Bank 18 Fed COM 1H

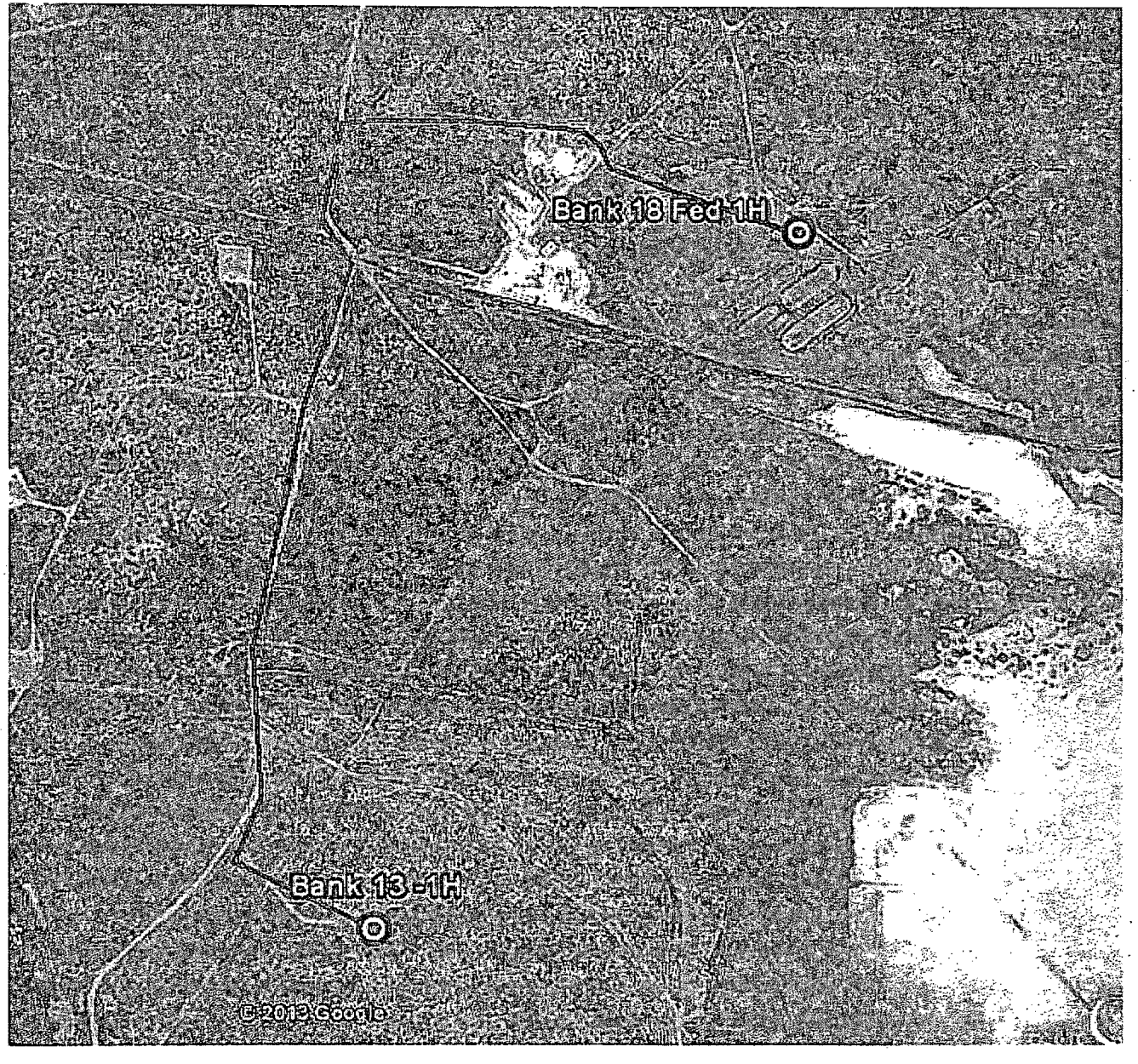
Covered Facility Layout
Bank 13 Fed. 1H



REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE

Facilities Layout
BANK 13 FED 1H

EDDY COUNTY, NEW MEXICO



Flow Line:
1- 4" Diameter,
9000 ft long,
buried flexpipe,
estimated
pressure 200 psi.

Flowline LO

SURFACE USE PLAN OF OPERATIONS

Operator Name/Number:	OXY USA Inc.	16696
Lease Name/Number:	Bank 18 Federal Com. #1H	
Pool Name/Number:	Undesignated Loving Brushy Canyon, East	40350
Surface Location:	133 FNL 485 FWL NWNW(1) Sec 18 T23S R29E	Fee
Penetration Point:	370 FNL 597 FWL NWNW(1) Sec 18 T23S R29E	
Bottom Hole Location:	660 FNL 350 FEL NENE(A) Sec 18 T23S R29E	Fee

1. Existing Roads

a. A copy of a USGS "Loving, NM" quadrangle map is attached showing the proposed location. The well location is spotted on this map, which shows the existing road system.

b. The well was staked by Terry J. Asel, Certificate No. 15079 on 1/10/13, certified 1/24/13.

c. Directions to Location: Beginning at the intersection of SH 128 and SH 31, go southwest on SH 31 for 2.4 miles. Turn left on paved road and go south for 0.5 miles. Turn left on proposed road and go southeast for 153.2' to locatio

2. New or Reconstructed Access Roads:

a. A new access road will be built. The access road will run approximately 153.2' southeast from an existing road to the location.

b. The maximum width of the road will be 15'. It will be crowned and made up of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.

c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.

d. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

e. Blade, water & repair an existing caliche road as needed.

3. Location of Existing Wells:

Existing wells within a one mile radius of the proposed well are shown on attached plat.

4. Location of Existing and/or Proposed Production Facilities.

a. In the event the well is found productive, the Bank 13 Federal tank battery would be utilized and the necessary production equipment will be installed at the well site. See proposed Production Facilities Layout diagram.

b. If necessary, electric power poles will be set along side of the access road.

c. All flowlines will adhere to API Standards.

5. Location and types of Water Supply.

This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations in the area and will be hauled to location by transport truck using existing and proposed roads.

6. Construction Materials:

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. Will use BLM recommended use of extra caliche from other locations close by for roads, if available.

7. Methods of Handling Waste Material:

a. A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins. Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility, see C-144 CLEZ.
1. Solids - CRI
2. Liquids - Laguna

b. All trash, junk, and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.

c. The supplier, including broken sacks, will pick up slats remaining after completion of well.

d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

e. Disposal of fluids to be transported will be by the following companies:
TFH Ltd. - Laguna SWD Facility

8. Ancillary Facilities: None needed

9. Well Site Layout

The proposed well site layout with dimensions of the pad layout and equipment location.

V-Door - Southwest Tanks - ~~Northwest~~ NE 3-13-2013 Pad - 280' X ~~410'~~ 380' LB 3-13-2013

10. Plans for Surface Reclamation:

a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.

b. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

11. Surface Ownership

The surface is owned by Mosaic Potash Carlsbad Inc., 1361 Potash Mines Rd., Carlsbad, NM 88220.
A surface agreement is currently being discussed and a copy will be provided after it is complete.
The minerals are both owned and administered by the U.S. Government and on fee acreage. The surface is of limited use except for the grazing of livestock and the production of oil & gas.
They will be notified of our intention to drill prior to any activity.

12. Other Information

a. The vegetation cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial. native range grass. The topsoil is sandy in nature. Wildlife in the area is also sparse consisting of deer, coyotes, rabbits, rodents, reptiles, dove and quail.

b. There is no permanent or live water in the general proximity of the location.

c. There are no dwellings within 2 miles of the proposed well site.

d. A Cultural Resources Examination has been completed by APAC, copy attached and forwarded to the BLM office in Carlsbad, NM.

13. Bond Coverage:

Bond Coverage is Individual-NMB000862, Nationwide-ESB00226

Operators Representatives:

The OXY Permian representatives responsible for ensuring compliance of the surface use plan are listed below.

Kim Moore
Production Coordinator
1017 W. Stanolind Rd.
Hobbs, NM 88240
Office Phone: 575-397-8236
Cellular: 575-706-1219

Charles Wagner
Manager Field Operations
1502 West Commerce Dr.
Carlsbad, NM 88220
Office Phone: 575-628-4151
Cellular: 575-725-8306

Roger Allen
Drilling Superintendent
P.O. Box 4294
Houston, TX 77210
Office Phone: 713-215-7617
Cellular: 281-682-3919

Calvin (Dusty) Weaver
Operation Specialist
P.O. Box 50250
Midland, TX 79710
Office Phone: 432-685-5723
Cellular: 806-893-3067

Sebastian Millan
Drilling Engineering Supervisor
P.O. Box 4294
Houston, TX 77210
Office Phone: 713-985-8750
Cellular: 713-528-3268

Brad Brown
Drilling Engineer
P.O. Box 4294
Houston, TX 77210
Office Phone: 713-985-6950
Cellular: 713-376-8417

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**OXY USA Inc.**
LEASE NO.:	**NMNM-110831**
WELL NAME & NO.:	**Bank 18 Federal Com 1H**
SURFACE HOLE FOOTAGE:	**0133' FNL & 0485' FWL**
BOTTOM HOLE FOOTAGE	**0660' FNL & 0350' FEL**
LOCATION:	**Section 18, T. 23 S., R 29 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

USGS Marker

A barricade is to be constructed to protect the USGS Bench Mark located at the southwest (V-Door) side of the well pad.

SPECIAL REQUIREMENTS

Visual Resource Management Class III

The project is partially located within VRM Class III. All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008). Tank height restriction (8 ft.) waived due to boundary location and existing development.

Drilling:

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of

surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

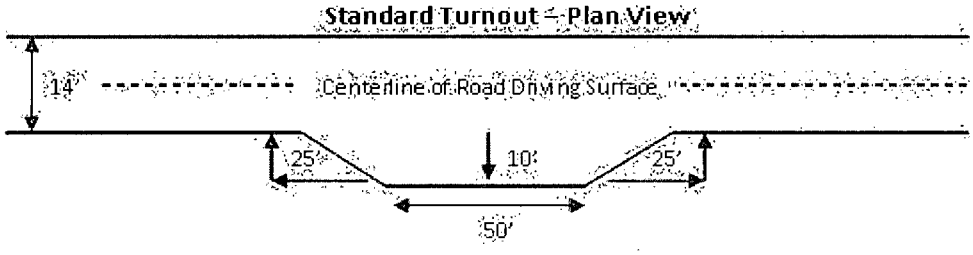
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

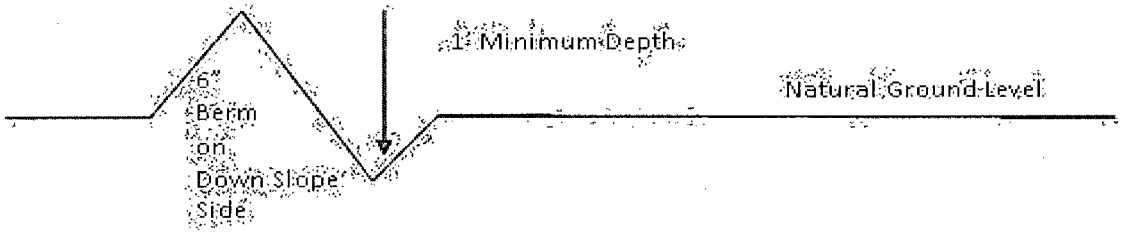
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

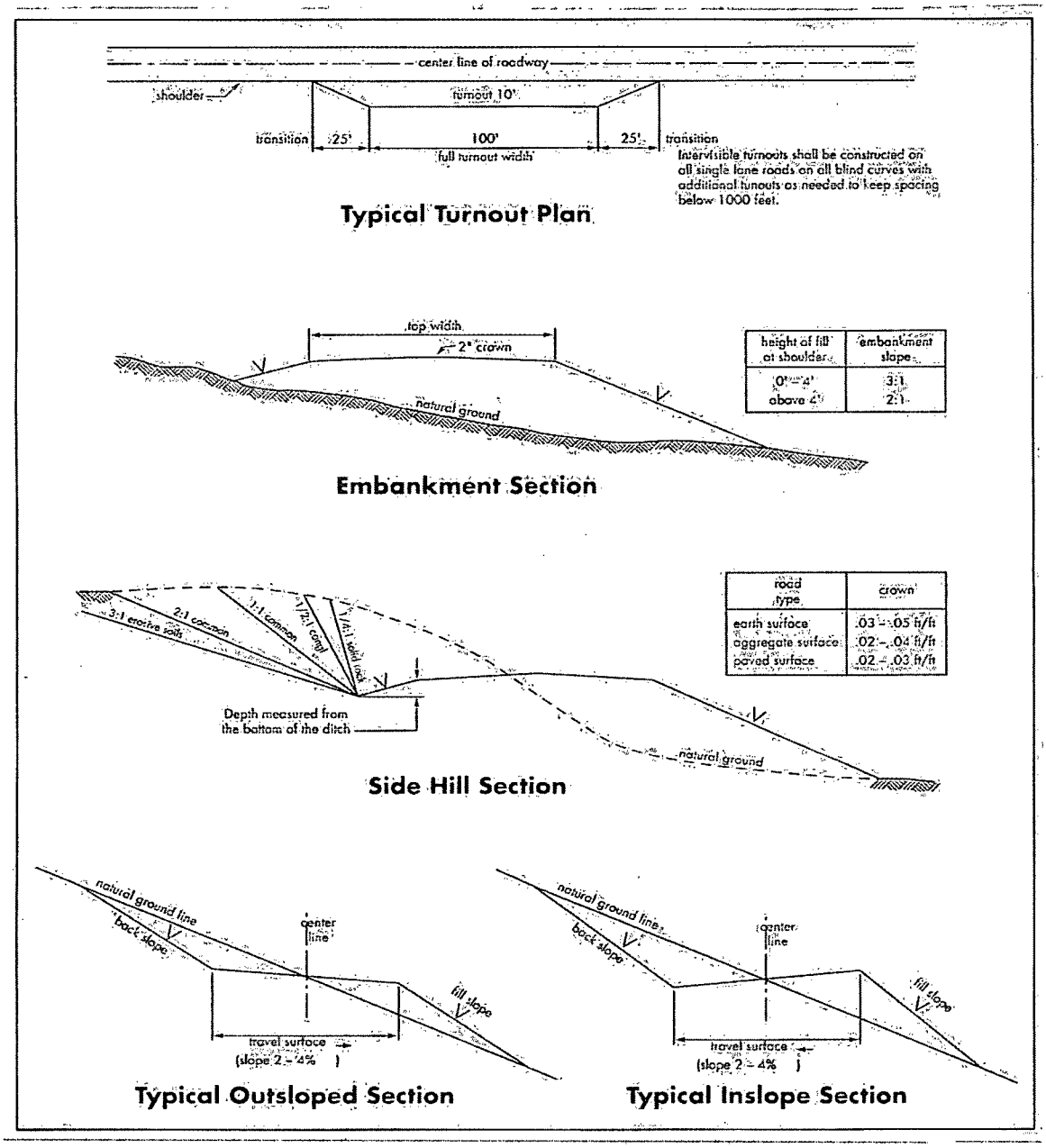
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Hydrogen Sulfide has been reported, but no measurements have been recorded. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Medium Cave/Karst
Possible water flows in the Salado and Delaware.
Possible lost circulation in the Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **250** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at approximately **2730** feet, is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at least 600 feet into previous casing string. Operator shall provide method of verification.

Contingency Cement:

Operator has proposed DV tool at depth of 5000'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

   a. First stage above DV tool:

   ☒ Cement should tie-back at least 600 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**

    a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
    b. **Manufacturer representative shall install the test plug for the initial BOP test.**
    c. **Operator shall perform the intermediate casing test to 70% of the casing burst. This will test the multi-bowl seals.**
    d. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the

authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (Blading is defined as the complete removal of brush and ground vegetation.)

Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.)

The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (Compressing can be caused by vehicle tires, placement of equipment, etc.)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

(X) seed mixture 1	( ) seed mixture 3
(X) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – Shale Green, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and

maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:
Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES (Not applied for in APD)

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed